



Chapter 1: Introduction

An Introduction to Aura

Aura is a powerful painting, animation and video layering system that supports most major still image and animation file formats, including NewTek's D1 RTV and FLYER CLIP, as well as QuickTime®, AVI, Photoshop®, BMP, GIF, JPEG, PNG, TIFF, and many more. Aura includes an arsenal of industry standard video and image processing tools, natural media brushes, and fully animated/video brush operations—you can literally paint with and onto video! Aura enhances any non-linear editing system, paint system, character generation program, or even 3D animation application.

With Aura's system of unlimited layering and support for multiple projects, you can easily position keys, 3D animations, video elements, painted layers and effects. Aura can manage layer transparency at a pixel level! Aura can be used as a powerful compositing tool and the time-line-based layers feature is perfect for rotoscoping.

When playing back animations/video, you have absolute control over playback rates. Keyframe tools can position and rotate any element in 3D space. Time stretching interpolation options make elements fit into defined time slots.

Animators will love the light table (onion skin) feature that allows you to see action in preceding and subsequent frames. The light table makes Aura ideal as a pencil test system for traditional animators. Aura even supports Wacom-compatible pressure sensitive drawing tablets.

Web graphic artists have waited for a tool like Aura to come along. With Aura's animation abilities, you can create stunning animated graphics and save them directly as Web standard animated GIFs.

Aura's plug-in architecture enables users to add new filters and features as external modules. You can even apply the effects of most filters over time, with different settings at different frames! Aura is also compatible with many Adobe® Photoshop® plug-in filters.

Aura features George, a rich macro programming language that can automate many tasks normally handled through the interface.

Aura provides direct access to TWAIN® devices such as scanners.

Aura is multi-threaded and automatically senses multiple processors in a system. Many operations, particularly filters, will function much faster in a multi-processor system.

TYPOGRAPHIC CONVENTIONS

The following conventions are used throughout this manual.

Directory Structure

Except for a few system files, all of the software is installed in a subdirectory called AURA found inside your main VT[3] folder. Unless otherwise specified, subdirectories referred to in this manual are found in the main AURA folder. (For example, if the discussion refers to the Images folder, the actual path might be C:\VT[3]\AURA\IMAGES.)

Typefaces

ALL CAPS	Computer keys, directories, device names (e.g., Enter, C:\Aura, Control+P, etc.).
Bold	Names of menus, commands, requesters, fields, buttons, etc., are set in bold type.

Keystroke Combinations

Key1 + Key2	Simultaneous keystrokes. Hold the first key and press the second key.
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Mouse Operations

LMB	Left mouse button
RMB	Right mouse button
Selecting	To single-click an item with the LMB to activate or select the item.
Deselecting	To single-click an item with the LMB to deactivate or deselect the item. Activate to select an option by clicking on its toggle button.
Deactivate	To deselect an option by clicking on its toggle button.
Clicking	To place your mouse pointer over an item and then press a mouse button. Clicking usually refers to the LMB.
Right-click	To click an item using your RMB.
Double-clicking	To rapidly click an item twice.
Dragging	To select an item with your mouse pointer and continue holding the mouse button down as you move your mouse. Dragging usually refers to the LMB.

ATTENTI-CON



WARNING The warning symbol highlights a discussion that warns the user about something. Pay special attention to text marked with this symbol.



NOTE The note symbol highlights a discussion that is particularly noteworthy.



HINT The tip symbol highlights time-saving tips and suggestions.

SOME GENERAL CONCEPTS

The reference manual offers a detailed description of the various icons, tools, menus and functions available in Aura. It is designed to provide quick access to the information you need.

Mouse and Graphic Tablet

You perform all drawing operations with the mouse or a digitizing tablet stylus. These two tools complement each other. You should typically use the mouse to draw rectangles or straight lines. However, for sketching, the digitizing tablet offers incomparable flexibility. Furthermore, the mouse is like an On/Off switch: either you draw something or you don't. The tablet is sensitive to the pressure exerted on the stylus, allowing you to control the amount of *digital ink* applied to your work of art.



NOTE The term mouse in the text can apply to either the mouse or digitizing tablet stylus if in use.



NOTE If you are using a Wacom Intuos tablet, its Tools ID feature allows Aura to remember the drawing tool and mode last used for each pen.

Left and Right Buttons

The left mouse button is equivalent to the stylus tip, while the right mouse button is equivalent to the stylus tip with its button pressed. If the stylus you use has no button, you can press the SHIFT key instead. This method also works for a stylus that has a button.

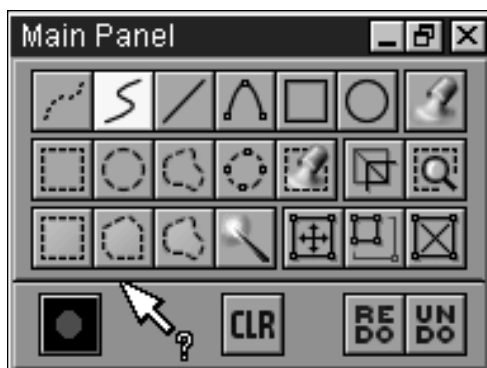
Often when you right-click a tool or icon, Aura shows its available options, so you should try right-clicking your tools to find shortcuts.

Brushes

You create images in Aura using brushes and drawing functions (freehand lines, straight lines, circles, etc.). Aura offers two basic types of brushes: built-in brushes and custom brushes. Custom brushes are basically images you can draw with; these can be as simple as a small oval or they can be large full-color images, including video and animations.

A and B Colors

Two colors are always displayed on the color selector button on the Main panel. The center color is the A Color and the surrounding color is the B Color. The A Color is your main drawing color. The B Color is used only when a particular function requires a second color.



A and B Colors Picker



HINT Use the Color: Invert A/B command, mapped to the n key, to swap the two colors.

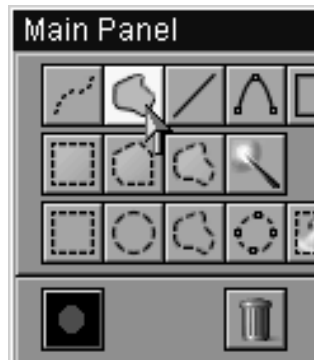
See the *Working With Colors* chapter for information on selecting colors.

Selecting Functions

When you click an icon, generally you select that function; however, some icons have multiple functions



FreehandLine



FreehandLine Filled

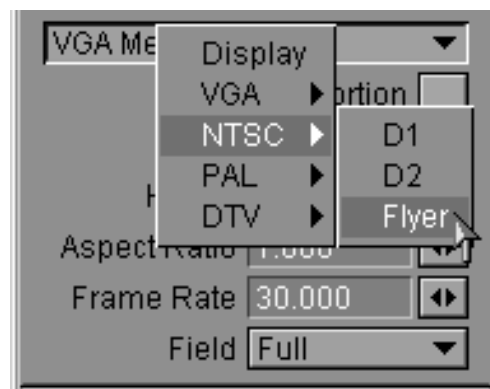
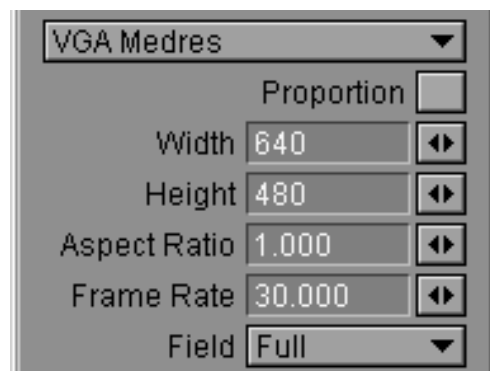
(e.g., the filled and non-filled drawing functions). In such cases, click on the icon once to access the first function and again to access the next function. The icon changes after each click.

Some functions have a settings panel that you access by clicking the icon with the right mouse button.

Pop-up Menus

You can identify pop-up menus by a button that contains a small arrow pointing downwards.

Sometimes, you see just a button with an arrow; when you click on this type of button, Aura displays a list of options. Drag the mouse pointer to highlight the desired option and then release the mouse button. The chosen menu item usually appears on the button. To avoid selecting an item, move the mouse pointer off the menu before releasing the mouse button.

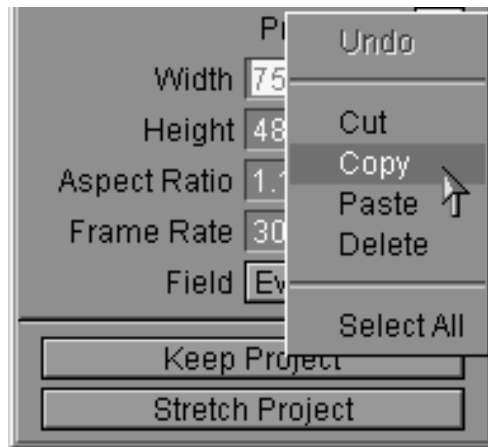


Example of Pop up menu

Text and Numeric Input Fields

You enter text or a value in the text and numeric input fields. Click in a field to modify its contents. A cursor appears and then you can type the new contents using the standard edit functions for your computer.

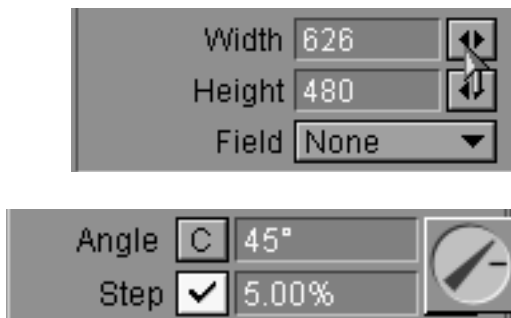
All input fields offer a pop-up menu, which is available when you click the RMB over the field. The available commands are **Undo** (CTRL+Z), **Cut** (CTRL+X), **Copy** (CTRL+C), **Paste** (CTRL+V), and **Delete**. (These operations work on the entire field.) You can also press SHIFT+DEL to delete everything in front of the cursor or SHIFT+BACKSPACE to delete everything behind the cursor.



Right click the input field for pop up menu

Mini-slider Buttons

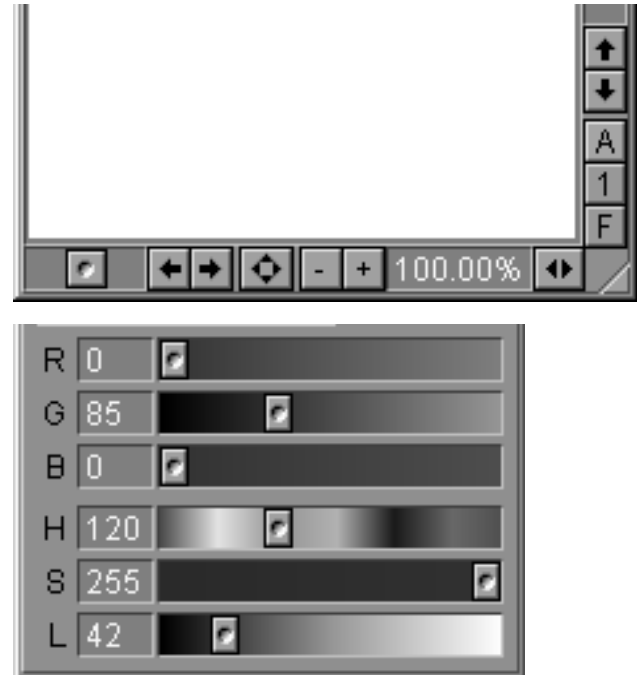
Numeric fields feature a mini-slider button to the right of the field. Dragging your mouse to the right increases the value, while dragging to the left reduces it. Releasing the mouse button accepts the new value. The mini-slider button beside the Angle field displays a compass to help you visualize the result of a numeric selection.



Above: mini-slider buttons. Below: Angle compass.

Sliders

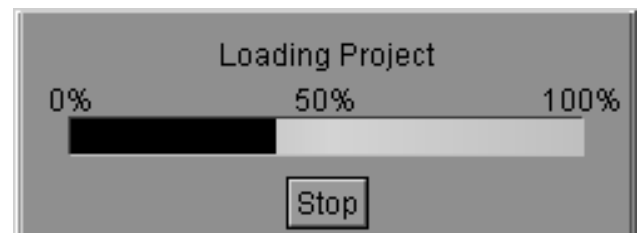
You can use Sliders to pan an area, scroll through a list and set values. Sliders can be oriented vertically or horizontally. The position of the slider indicates which section of a list/area is visible or the set value. Clicking on either side of the slider with your LMB moves it by some increment. Using your RMB makes the slider jump to your mouse pointer position. Some sliders also have two arrow buttons that allow you to move in small increments in the arrow's direction.



Examples of sliders

Progress gauges

Many Aura operations display a progress gauge so that you can monitor the status of the function. When a progress gauge is displayed, you can abort the current operation by clicking the **Stop** button on the gauge or pressing the Esc key.



Example of progress gauge



NOTE If you abort an operation, everything done prior to the interruption will remain. However, in some cases, you can then use Undo to reverse this partial result.

STARTING AURA

Aura VT is launched from the main VT[3]@ menu. You may alternatively run Aura from the Windows Start menu, for use without the VT[3]. Unless you have previously saved a different startup configuration, Aura launches in D1 NTSC video mode, ready for use with your VT[3].

Default Configurations

The *Configuration* defines the current work environment, including the position of panels, tool settings, Project resolution and Frame Rate, etc. When you quit Aura, you are offered the option to save the current configuration. If you do so, the configuration used at the next start-up will conform to the new saved settings.



NOTE AuraVT always opens using the last saved configuration. To access a different preset configuration, you must either open a new project using **File > New Project**, or use

Project > Modify Project to adjust the settings of the current project.

The pop-up menu in the sections mentioned above contains a list of pre-defined user configurations. If you use Aura frequently, or different users have different preferences, you may want to set up various configurations. You might create a configuration for drawing and another for touching up photos.



NOTE The manual assumes you are using the default settings.



NOTE Creating a new user configuration in Aura VT requires you to modify a text file found in the AURA\DATAS folder. The file PAGESIZE.CONF defines the preset configurations available for ready use in the **New** and **Modify Project** menu panels. It would be prudent to back up the original file under another name before modifying it. Be sure to save the modified file as a plain ASCII text file.

Configuring Project Properties

You can set various basic parameters (**Width**, **Height**, etc.) for new projects or modify them for open ones. To save these settings as the start-up default settings, select **Save this configuration** when you **Exit** Aura. When opening new projects or modifying open ones, you can quickly choose settings for common resolutions ranging from VGA to film from the pop-up menu. You can also enter a name for your project in the input field to the right of the pop-up menu. This name will be the default filename when you save the project. If you load a saved project, Aura applies the settings from that project automatically.



NOTE VT[3] users should normally use the D1 setting for their appropriate video standard (i.e., NTSC or PAL).

The **Width** and **Height** values set the resolution of the project in pixels.

Project Frame Rate

The **Frame Rate** setting determines how many frames per second your project should playback, if it is a sequence. Use the pop-up menu to the right of the input field to select from commonly used settings, or enter a value directly into the field

Changing Project Properties

You can alter these settings after your project is open by choosing **Project > Modify Project**. If you activate the **Lock Aspect** option, changes to either the **Width** or **Height** fields will force a change of the complementary resolution setting, maintaining a constant width to height ratio. You can also rotate your project. In the **Angle** field, you set the rotation in degrees. The new page size indicates the new project size after rotation.



NOTE The result of clicking the Keep and Stretch buttons vary depending on the project parameter being modified.

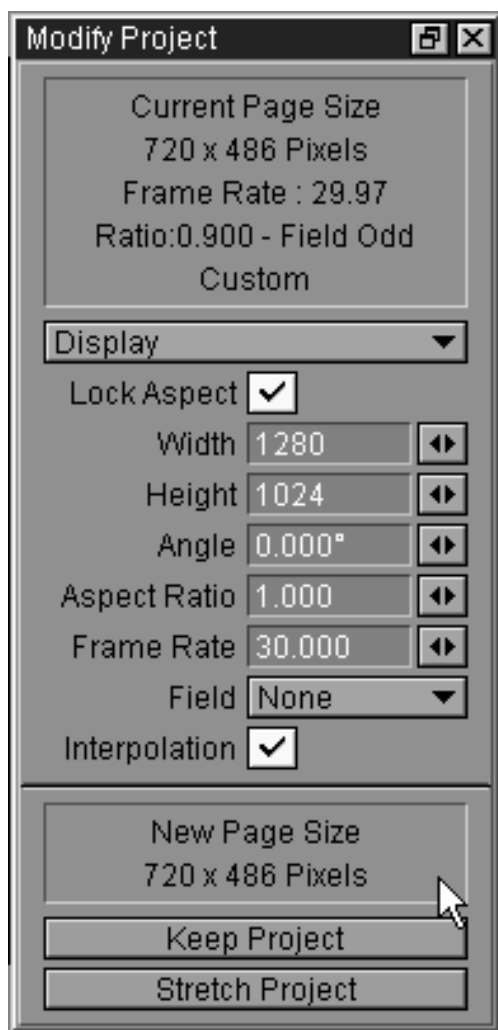


NOTE If you need to stretch the resolution, but keep a frame-rate change (or vice versa), you must make each change separately via the Modify Project panel.

Resolution Changes

When modifying the project resolution, click on the **Keep Project** button if you wish to retain the contents of the current project without stretching to fit the resized page. In this case, Aura will crop the project images at the bottom and right margins when the new project size is smaller than the existing project. Aura leaves an empty area at the bottom and right if the new size is larger.

Clicking the **Stretch Project** button instead scales the contents of the current project to fit the resized page. Aura enlarges or reduces project images to occupy the entire new working page.



The Modify Project Panel

Frame Rate Changes

When you change the **Frame Rate**, clicking **Keep Project** retains the existing number of frames, but

the project duration changes based on the new frame rate. If the new rate is lower, project duration increases and Aura displays fewer frames per second. If the new rate is higher, project duration decreases and Aura displays more frames per second. For example, if you change from 25 fps to 50 fps, you decrease project duration by half. You need two seconds to display 50 images at 25 fps, whereas you need only one second at 50 fps.

When you click **Stretch Project**, the project duration remains the same. The number of frames changes based on the new frame rate. If the new rate is lower, the number of frames in the project decreases (fewer frames are needed for each second in the project). If the new rate is higher, the number of frames in the project increases (more frames are needed for each second of project). For example, if you change from 25 to 50 fps, you double the number of images in the project; you need 50 frames for one second of display at 50 fps, but you need only 25 frames at 25 fps.

During time stretching operations, Aura adds missing frames or removes excess ones as necessary in one of two ways. The method used depends on the status of the **Interpolation** button.

Aura can provide a smooth change in frame rate when **Interpolation** is selected. In this case, added frames are interpolated between existing frames (or neighboring frames may be merged when necessary) by overlaying several frames with varying transparency. When **Interpolation** is *not* employed, layers are stretched or shortened as required simply by copying or deleting existing whole frames throughout the duration of the project.



NOTE Once you choose Keep Project or Stretch, you cannot undo the change.

You can change the starting frame/time code setting and mode by choosing **Project > Start Frame** from the main menu. The drop-down menu beside the entry field in the requester permits you to set the value using either frame or timecode.



Starting frame/time code setting

Working with Video

A single video frame normally consists of two interlaced fields called the *odd* and *even* fields. Aura lets you work independently with either field, preserving valuable detail that is usually lost if the fields are merged into a single image.

If you work with video, you should understand the **Field** and **Aspect Ratio** settings. The **Field** setting determines whether the **Even** field or the **Odd** field comes first. (If you are not working with video fields, set this parameter to **None**.) You also want to set **Start to Time Code**. The even field is indicated on the global timeline by a .0 appended to the time code. The odd field uses .1. (e.g., 00:00:00:15.0, 00:00:00:15.1, 00:00:00:16.0, etc.)

When you select **Even** or **Odd**, Aura displays an even and an odd field for each frame along its timeline. If you choose **Even**, Aura creates the field of even-numbered lines first (0, 2, 4, etc.) then it creates the odd field (lines 1, 3, 5, etc.), for each frame. If you use **Odd First**, Aura reverses the order in which fields are created.



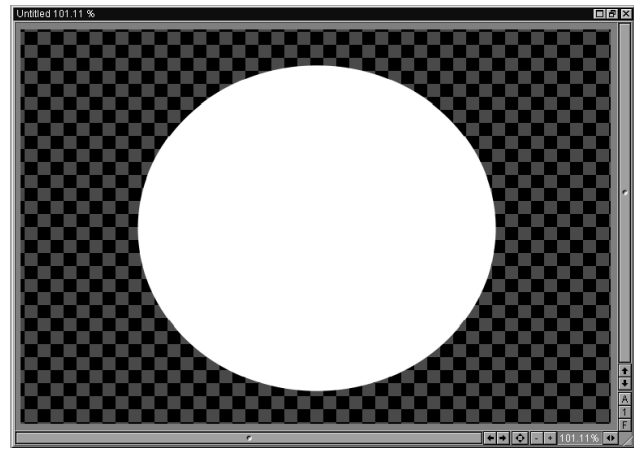
NOTE The field setting affects the order of the fields when imagery is exported for use in a video project. If you find exported sequences flicker badly on your VT[3] video output, it's very likely the field order setting you are using in Aura is incorrect.

Video projects are usually fielded when the project calls for the addition of animated brushes. This makes for smoother motions, and reduced flicker. Otherwise, even when your project involves video but does not require the addition of animated objects, you may be able to save considerable time and system resources by not working in a fielded project mode.

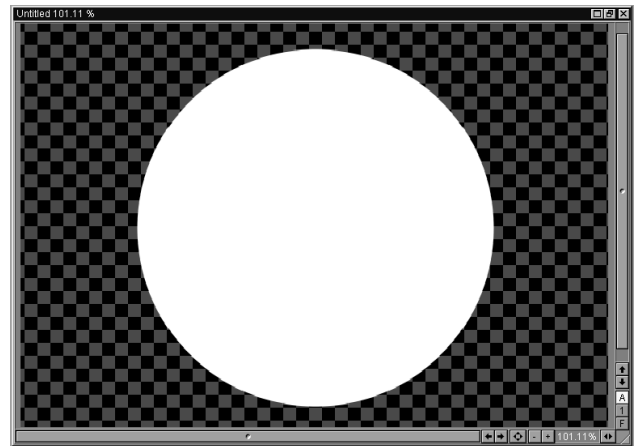


NOTE VideoToaster 2.0 uses **Odd** field first for NTSC, while it uses **Even** first for PAL.

Video also does not use square pixels like most computers do. Generally, video pixels are vertically elongated. Therefore, a video image looks squashed when you view it on your (square-pixel) PC monitor. The **Aspect Ratio** settings let you view a video image correctly on your PC monitor. The value is the height to the width ratio of a pixel. An **Aspect Ratio** of 1.0 indicates square pixels. A ratio of 1.1 indicates the pixel is 110 percent of the width (i.e., vertically elongated or tall).



Standard display



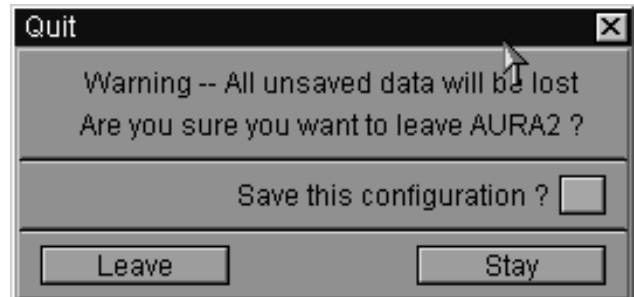
Aspect Ratio display option active



NOTE The **Aspect Ratio** setting affects only the display of your project and does not impact underlying data. It is not possible to actually modify the true aspect ratio of imagery using this setting.

EXITING AURA

Select **Quit** from the **File** menu to exit from Aura. A confirmation panel appears. Activate **Save this configuration?** to save/update the current user configuration. This configuration will be used when you



The Quit Panel for exiting Aura

next start the program. Deactivate this option if you do not want to save/update the configuration. If you

don't save your configuration, all user settings are lost including keyboard shortcuts, temp directory settings, Photoshop plug-in settings, and window positions.

The **Leave** and **Stay** buttons at the bottom of the panel let you exit the program or abort the operation, respectively.

THE AURA INTERFACE

Your project window is the large floating window where you draw. The pull-down menu at the top of the screen offers save and load options, edit functions, system settings, filters and your help settings. The Menu panel, just below the menus, contains shortcuts to common functions, panel display controls and editing state options. The Main panel contains icons that access the main functions.

You can move any panel (including the Menu panel) around the screen by dragging its title bar. When you move a panel near the edges of other panels, panels will dock (i.e., tend to align) themselves; docking can help you keep your work area neat and tidy.

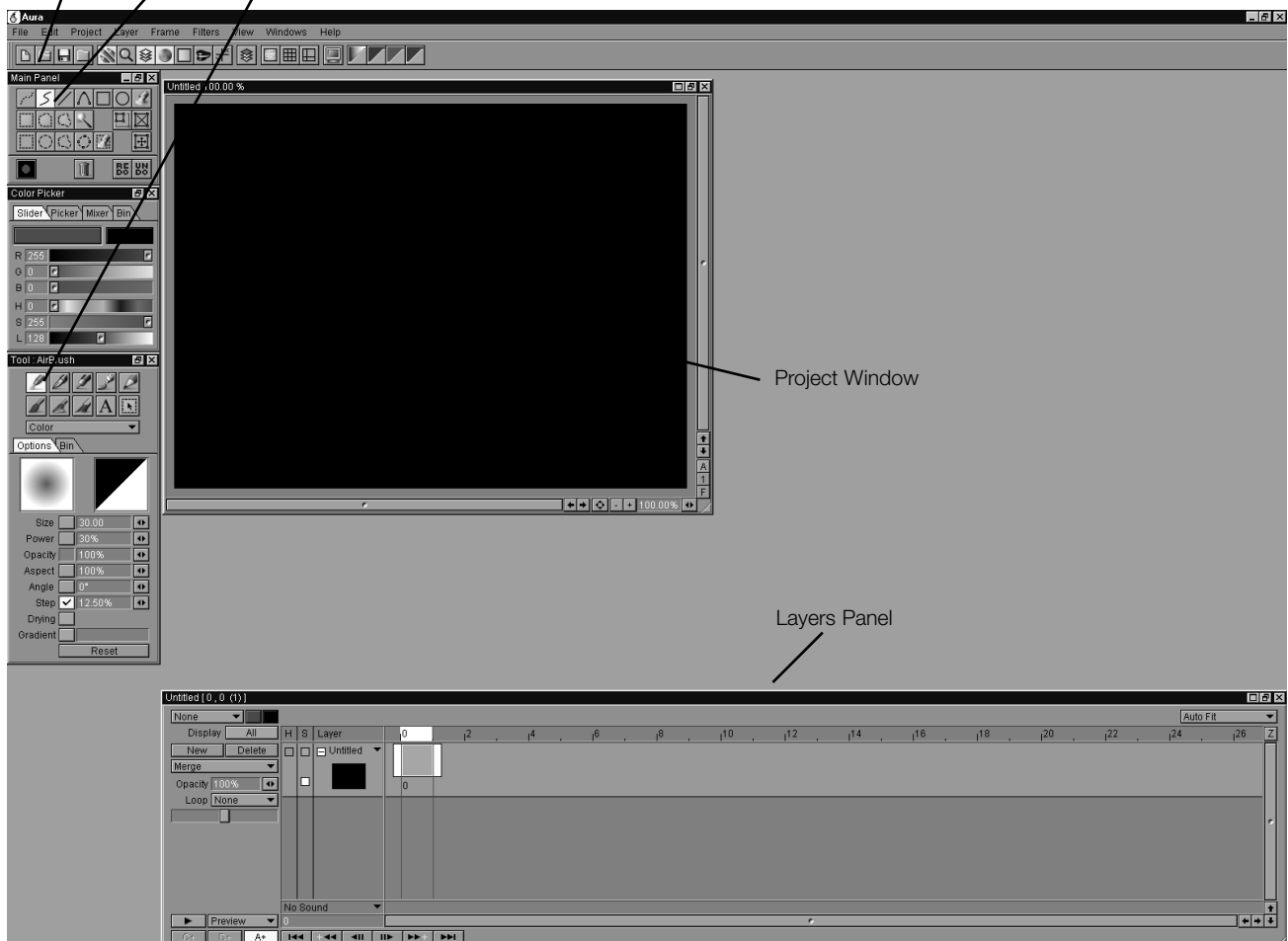


NOTE When the Menu panel is docked at the top of the screen, the icons are arranged horizontally. You can reposition the panel by dragging the handle on the left edge.

If you have overlapping panels, you can bring a panel to the front by clicking on its titlebar or on any inactive area (a section that does not contain an icon, button or field). You may also use the Depth button to toggle an overlapped panel to the front or back. This button is located on the right side of a panel's titlebar to the left of the close panel (X) button.

Some panels are resizable. They have a drag handle in their right-bottom corner, but can be sized by dragging any edge or corner.

Menu Panel Main Panel Tools Panel



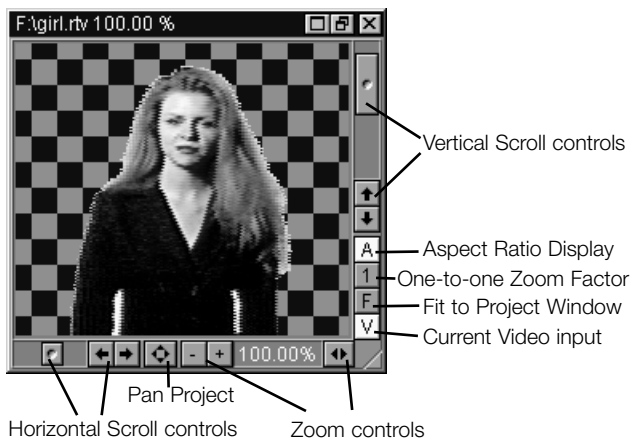
Aura interface panels

The Project Window Background

You draw and perform your image editing chores in the project window. By default, the background appears black, though it is actually transparent until you paint on it. You can change the default color from black if you wish, as discussed in Chapter 7.

The Project Window Controls

You can adjust the overall size of the project window by dragging any of the edges or corners. The frame of the project window contains a number of controls along the bottom and right edges.



The project window's lower border displays the magnification ratio. You can change the magnification using the various zoom controls. Use the + and - buttons to increase and decrease the magnification, respectively. (You can also use the > and < keys or ALT + RMB.) You can enter a magnification value directly into the field.

Click the **1** (One-to-one Zoom Factor) button to quickly display the image at 100%. Click the **F** (Fit to Project Window) button to adjust magnification so that you can view the entire image in the project window (Right-click on F to resize the project panel). Click the **V** (Video Input) to display the VT[3] video input in the project window. RMB opens the Video Device settings panel, allowing you to select between available sources.

 **NOTE** See the previous discussion on Working With Video for information on the Aspect Ratio Display button.

When the image is larger than the project window, you can use the scroll controls to navigate around. Dragging directly on the Pan Project button pans the image inside the window. You can also pan by hold-

ing the ALT key and dragging with the LMB directly in the window.

The numeric keypad also allows you to move around the screen. The 2 and 8 keys move vertically, the 4 and 6 keys move horizontally, and the 1, 3, 7 and 9 keys move diagonally. The 5 key centers your image.



NOTE You can access some of the project window controls from the **View** menu.

Navigating

Choose **Windows > Navigator Panel** or click the Navigator button on the menu panel and a small panel appears.



Navigating the Aura interface

In this small panel, a red bounding box indicates the area displayed on the current project window. You can drag this box around with your LMB to pan the contents of the window. Dragging in the window with your RMB will scale the size of the bounding box. Clicking the **N** button launches another project window; this procedure is the same as choosing **View > New zoom window**. The buttons on the zoom window have the same effect as the identical buttons on the project window.

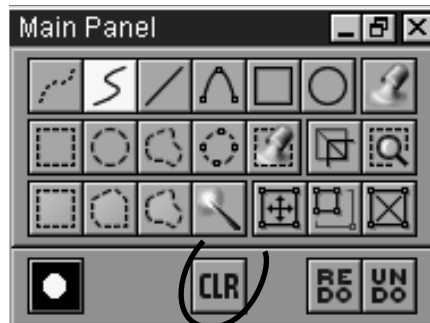
GENERAL OPERATION

FUNCTIONS

The Kill Function

The **Kill** function erases the current frame or selected frames of the current layer—respecting any selected areas. If you use the LMB, the image becomes transparent. However, if you use the RMB, the image fills with the B Color.

You can also choose **Edit > Clear** to clear theselected area.



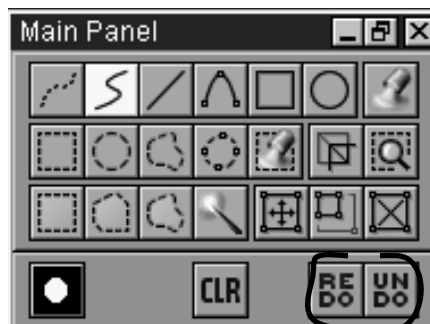
The Kill or Clear function button

The Undo/Redo Functions

The **Undo** function undoes the last modification you made. This may be a drawn line, a filter application, merging of two layers, a change in the duration or position of a layer, etc. The number of undo levels is limited only by your memory resources. You set the amount of memory allocated to undo on the Settings panel, discussed in the next chapter.



NOTE Undo works mostly on drawing operations and each project has its own undo. Some actions are not undoable, such as Modify Project.



Undo and Redo buttons

The **Redo** function redoes operations that were undone. As long as you have made no editing changes, you can redo all the way back to the last operation. Once you perform an operation, however,

you change the course of history in a fundamental way and will not be able to get it back.

You can also access **Undo** and **Redo** from the **Edit** menu.

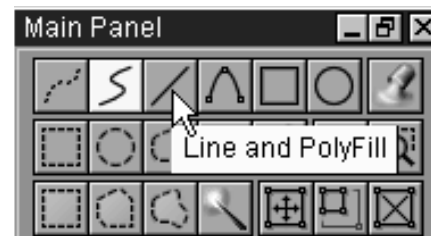
The Re Apply Function

The Re Apply function should not be confused with Redo. Re Apply *redoes* the last drawing operation using the current settings. This allows you to repeat a step using, say, a different color or different drawing tool. Simply undo the operation, change your drawing options (e.g., select a new color) and then press the ENTER key or choose **Edit > Re Apply**. The shape is redrawn using the new options. You can also use Re Apply on layers.

HELP MENU

Aura features a help balloon system. When you let the mouse pointer hover over an icon, button, text field, or pop-up list, a pale yellow box appears that provides information on the item's function. You can use the **Help** menu at the top left of the screen to choose the type of help balloon that you want to see.

You can choose your preferred type of help bal-



Example of a Help balloon

loons from the **Help > Inline Help** submenu. The **Full** option, the default, displays the full amount of help information and the **Fast** option displays an abbreviated version. Select **None** to disable this feature.

About Filters

The About Filters menu displays a list of the available plug-in filters installed for Aura. When you select a list item, you launch a panel that displays various information.

About Aura

The About Aura menu selection opens the Aura information panel. The information on the panel includes the program version, your registration information and credits. Click **OK** to close the panel.



Chapter 2: File Management and User Preferences

LOADING PROJECTS

Aura is a multi-document application, making it possible to load and work on multiple projects at the same time. You select the active project by clicking in its project window or by choosing it from the **Windows** menu.



NOTE You'll need to click on the actual drawing area, not the title bar or window frame.

When you first run Aura, a blank project appears using the last saved default configuration, as discussed in the prior chapter. If you wish to begin a completely new project, choose **File > New Project** or choose the New Project icon on the menu bar

near the top-left of the screen; the icon looks like a blank paper with a folded corner. A panel appears where you can set the new project's properties.

If you wish to work on a previously saved project, choose **File > Load** or choose the Open Project icon on the menu bar near the top-left of the screen; this icon looks like two file folders. In addition to loading Aura project files (.aur), you can also load any of the supported file formats to start a new project. When you load an image or anim, Aura uses the image or anim's dimensions for the project size.

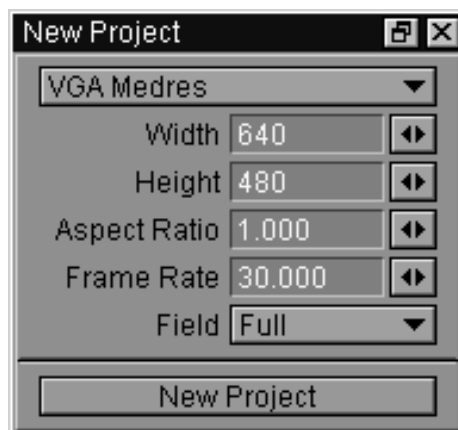


NOTE See the Appendix for a discussion of supported file formats.

SAVING AND CLOSING PROJECTS

A project consists of all layers and their settings. When you save a project, Aura stores everything in a single file. Aura maintains the order of the layers in the list and their position on the time-line. The **Save** and **Save As** functions are only for use with Aura project files. The file format used is specific to Aura. To share image data with other programs, use the **File > Export** function.

To save a project, choose **File > Save** or choose the Save Project icon on the menu bar near the top-left of the screen; this icon looks like a floppy disk.



The new Project panel

Then use the file requester to locate a suitable subdirectory, and enter the project name or choose an existing project. Choose **File > Save As** to save using a new filename.

To close a project, simply click the close window button on the project window – it's the X button in the top-right corner. You can also close the current project by choosing **File > Close Project** or choose the SaveProject icon, which looks like a single folder.



NOTE Closing the last open project automatically creates a blank new project.

Projects do not save keyframes or filter settings. You must save these individually from the keyframe or filter requesters. However, Aura does save the following items in a project: opacity maps, keyframed motion paths, stroke recorded paths, filter settings, custom brushes, and text brushes.

IMPORTING GRAPHICS

Importing means you want to add graphics to the active project. To do this, select the file type (**Image**, **Sequence**, **Brush** or **AnimBrush**) from the **File > Import** submenu.

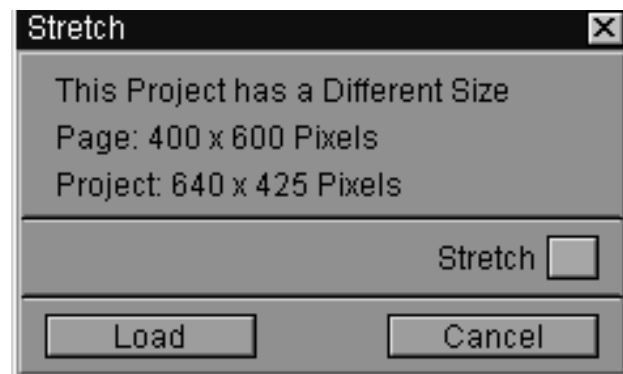
Generally, you should use **Image** to import still images. If you import an animation as an image, only its first frame is imported. If you import a Photoshop® PSD file, Aura loads the entire image as one layer. If you want to load each layer of a PSD file into a separate Aura layer, load the file using **File > Load**, instead of importing it.



NOTE See the *Appendix* for a discussion of supported file formats.

Importing Different Resolutions

If the size of the image that you are importing is not the same as the current project size, Aura asks if you want to stretch the image to the current page size.



The Stretch dialog box

If you choose the **Stretch** option, Aura enlarges or reduces the image depending on the project page size. Stretching your image can change its proportions. If you do not choose **Stretch**, Aura places the image in the upper-left corner and crops off any part of the image that falls outside the project window. If you want to open a project that equals the size of a certain image, load the image instead of importing it.

Importing Sequences

Select **File > Import > Sequence** to import an animation file (e.g., RTV, AVI, FLC, Flyer, GIF, anim-brush, etc.) or a series of images. The Load requester you see will vary depending on the project settings. For a project set to full frames, the requester reads Full frames and Fix Motion. For fielded projects, the requester offers Full Frames, Even and Odd options.

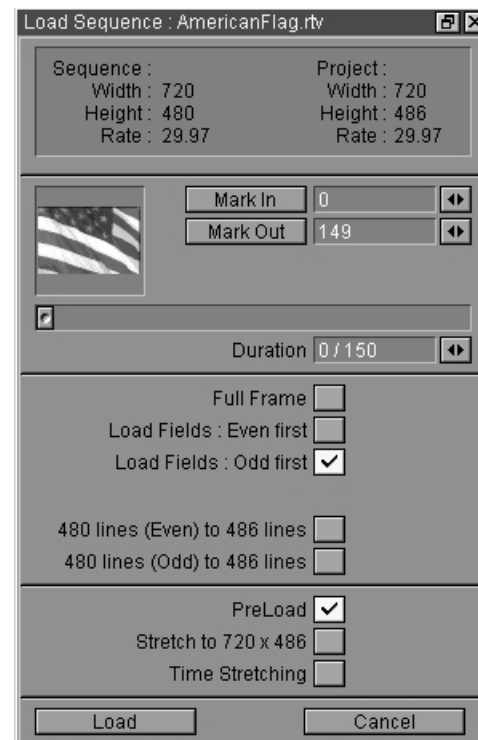


NOTE You can load an Aura project using Image or Sequence. Aura loads the entire project, including its various layers.



NOTE Aura will import SWF files (Macromedia Flash files), but you cannot export in this file format.

If the file you select in the file requester is an animation or part of a series of images, the Load sequence panel appears. If you want to load a series of images, select the first image in the series. Aura automatically recognizes a sequence of images by its



The Load Sequence panel

sequenced filenames, like Pic001.bmp, Pic002.bmp, etc.

The **Load Sequence** panel provides file information and a preview window. Clicking the preview window launches the preview player, discussed in the

Layers chapter. You can also shuttle through the frames by dragging the slider beneath the preview window. If you hold the Ctrl key as you drag, the preview will update in realtime as you drag. Otherwise, it won't update until you release your mouse button.

By default, the In and Out fields, located to the right of the **Mark In** and **Mark Out** buttons, reflect the first and last frames in the sequence. If you want to trim the head or tail of the sequence, adjust the appropriate fields. You can visually set the In and Out points by dragging the slider to the desired frame and clicking the **Mark In** or **Mark Out** button.

The **Duration** field displays the frame selected by the slider and the duration of the sequence (in frames) separated by a slash. The duration is a result of the In and Out point settings.

Video Options

Full Frame simply means that each frame in the sequence is treated as a complete frame in Aura. The other two options are special treatments for loading interlaced video files.

With the **Load Fields (Even first)** option, Aura obtains the first displayed image by interpolating information between the lines of the even field of the first image in the sequence. The second image shown in Aura's layer panel is the result of interpolating the odd field (of the first source image), and so on. This option gives a stable image by interpolating each loaded field to create a complete image. **Load Fields (Odd first)** is the complementary option, placing the interpolated odd field first. You normally use these options when you intend to use the animation sequence as video again.



NOTE There is no universal standard that determines which field comes first. However, it should be very apparent if the wrong option is used when you view the imported video, since you will have essentially swapped the time-position of every other (Aura-doubled) frame resulting in severe interlace flicker. (Note: VT[3] video clips are Odd first for NTSC and Even first for PAL.)



NOTE Using one of the **Load Fields** options will double the number of total images displayed within Aura.

The **Import Sequence** panel provides two added functions for dealing with video clips. The **480 lines**

(Even) to 486 lines and **480 lines (Odd) to 486 lines** switches adjust the vertical position of the fields within Aura. These options are for use when you work with 480 line file formats (like DV-AVI files) within a 486 line high project, such as one suited to VT[3]'s RTV file format. Selecting the correct option for the file format you are working with is important to prevent field positioning errors on Export.

For NTSC DV files imported into a 486 Odd (D1 NTSC) Aura project, select **480 lines (Odd) to 486 lines**. Aura offsets the imported sequence by 2 lines down to maintain correct fielding while centering the sequence. If dealing with 480 line 'even first' files (such as the RTV format created by the version 1 VideoToasterNT) you should select **480 lines (Even) to 486 lines**. In this case, Aura offsets the sequence 3 lines to correct field order and center the sequence.

The PreLoad Option

When active, the **Preload** option loads the entire animation into memory. When you deactivate **Preload**, Aura loads the sequence as a read-only layer by reading frames from your hard drive on an as-needed basis. Therefore, non-Preloaded layers load instantly. The sequence will appear red in the Layers panel and you cannot edit it, though you can move it as you would any other layer. To convert a non-Preloaded layer to an editable layer, simply click with your RMB and select **Change to Preload layer**.



WARNING Be careful using the **Preload** option with video clips since they are often very large and you may not have enough memory.

Deactivating **Preload** can save a lot of memory. Aura supports multiple non-Preloaded layers, which are perfect for background layers that don't need to be edited. However, with large animation files, this may cause your system to seem sluggish.



NOTE Non-preloaded layers cannot be painted on or processed directly in Aura VT, but their opacity can be set using the menu which appears when you click on them in the Layer panel with your RMB.

Sizing Options

If the height and width of the imported images do not match the project size, the **Stretch to** option is available. The **Stretch to** option scales the images to the project size. Stretching your image can change its proportions. If you do not choose this option, Aura places the upper-left corner of the images in the

upper-left corner of the project window. Any portion of the image extending outside the right and bottom borders is trimmed off.

Frame Rate Mismatch Handling

If the frame rate of the imported sequence does not match the project's frame rate, activate **Time Stretching**. This option automatically interpolates the frames in the sequence to match the timing of the project. Otherwise, the sequence will just be loaded frame by frame, regardless of mismatched timing issues.

Importing a Brush

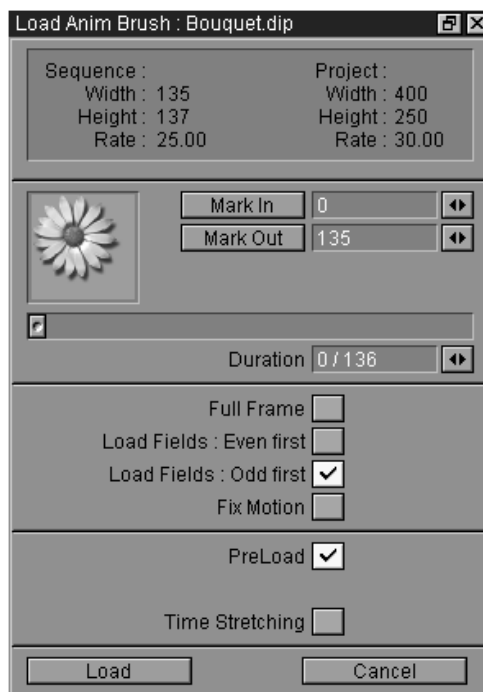
Importing a brush (**File > Import > Brush**) is nearly the same as importing an image. The big difference is that instead of appearing in a layer (or layers), the image will be attached to your pointer as a custom brush, replacing any current brush. If the image consisted of layers, it will be flattened.



NOTE When you import a brush, it replaces the current brush.

Importing an Animbrush

Importing an animbrush (**File > Import > AnimBrush**) is almost the same as importing a sequence, except you cannot load an Aura project.



Options available on the Load Animbrush panel to import an Animbrush

Animations (e.g., RTV, AVI, animated GIF, animbrush, etc.) or a series of images are acceptable.

Aura displays a panel that's very similar to the one that appears when you import a sequence. However, since your imported animation will act like a custom brush, there is no option to scale the image to the project size when loading. Nevertheless, animbrushes can be scaled once loaded using the Edit Brush panel.

Notice that the Load Animbrush panel includes an additional option beneath the Video options. Use **Fix Motion** to mix the even and odd fields of each image in the sequence. This is sometimes called **deinterlacing**. This option uses the same technique as the **Filters > Video > Fix Motion** filter. You typically use **Fix Motion** to load video sequences for computer display.

File Requester Preview

When you import files into Aura, you can right-click on the icon in the file requester to launch a preview panel. The preview panel lets you play, pause, stop and loop the file if it is an animation. You can also show a block of timecode over the preview by activating the **Show Number** option. The preview shows the animation at its native resolution, so if the file has a resolution of 640 x 480, then the preview will expand to that size.



The preview panel from the file requester

EXPORTING GRAPHICS

When you **Export**, you save the Aura project (or a single frame) using a file format other than the native Aura format (.aur). You should first select the desired format from the **File > Mode** submenu.

The top section of the **File > Mode** submenu lists

the file formats capable of storing animations as one file (i.e., AVI, DEEP, RTV, etc.). The formats listed on the lower portion of the menu store individual images only (i.e., BMP, ILBM, etc.). When you export an image as a Photoshop PSD file, Aura saves each layer to a separate PSD layer.

The import and export menus give you an option for **Alpha**, which defines how you import and export an alpha channel. Your choices are **PreMultiply**, **Non-PreMultiply**, **Ignore** (no alpha, 24 bit image) and **Alpha Only**, which loads only the alpha channel (use this when you would like to import or export the mask of an image only).

The **Blend Alpha with Stencil** mode in the Export menu lets you export an image or a sequence with an alpha channel that comes from a Stencil.

When you select one of the file formats, a dialog

ors, compression method, etc. Please see the *Appendix* for a detailed discussion on the individual file format settings.

Exporting an Image

When you export an image, you save only the current image as it appears in the project window. Any file format can be used, including those usually reserved for animations (RTV, AVI, FLC, etc.)



NOTE Aura saves the background (e.g., **Color** or **Check** mode) in the image as well.

However, the effects of the light table will not be saved. If the background is set to **None**, the background will be transparent if the file format supports an alpha channel, otherwise it will be black.

Exporting a Sequence

When you export a sequence, Aura saves your selected layers, or if no layers are selected, Aura saves the entire project. All displayed layers are flattened. Depending on your chosen export mode, you can export your sequence as a single animation file (RTV, AVI, DEEP, etc.) or as a series of image files (BMP, ILBM, etc.).

Filenames for Image Series

When saving a series of images, specify only a *root* name in the file requester. Each saved image uses the root name followed by a number corresponding to its position in the project. For example, if you input Image as your basic name, Aura names your new files Image0, Image1, Image2, etc. If the basic name contains a number (for example Image10, file numbering starts with this number (Image10, Image11, Image12, etc.).

If a sequence contains at least 10 images, you should specify a number in the basic name so that the alphabetical order of files is the same as the order of images in the sequence. If the number of images in the sequence is more than 10 and less than 100, place two numbers behind the basic number (like Image00). If it is greater than 100 and less than 1000, place three digits behind the basic name (like Image000) and so on.

Video Mode Options

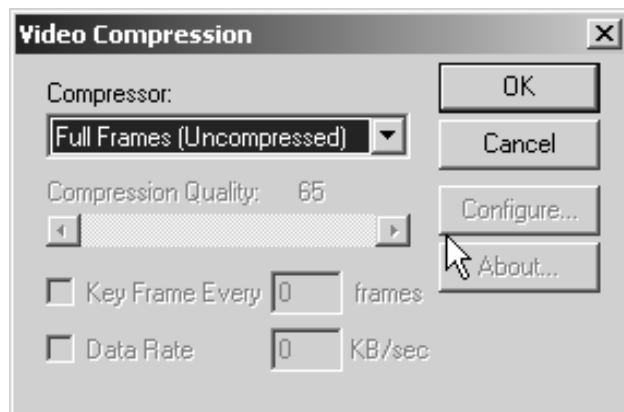
When you choose a video mode other than DEEP or Flyer Clip, an options panel appears. For AVI or QuickTime, it is a Windows panel that shows only



Available formats for export and import

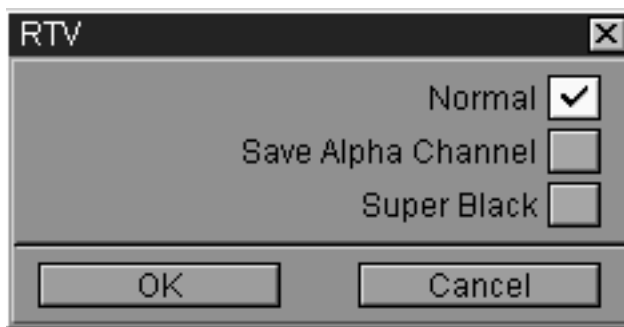
box usually appears that allows you to set preferences for the selected format. These are options include color depth, dithering method, number of col-

video codecs that are installed on your computer, and available compression settings. For more information on these file formats and these panels, see the Appendix.



Video Compression panel for AVI format

The RTV panel lets you choose **Normal** settings, save an **Alpha Channel** to maintain transparency, or activate **Super Black**. Super Black gives you an effect similar to an alpha channel so you can export hard edges cleanly. Super Black does not work on partial transparencies. On the GIF panel or the FLC panel you choose options for dithering and the palette and number of colors to export. For more information about these file formats, see the Appendix.



Above: The RTV panel.

Below: The Top portion of the GIF panel (bottom preview area not shown)

Exporting a Brush

You can save a brush in any format. If the current brush is animated, you save only the current brush image.

Exporting an Animbrush

Exporting an animbrush is similar to exporting a sequence, except there are no video interlacing options. If you use one of the animation file formats, all of the brush images are stored in a single file. (The DEEP format is recommended for its compactness.)

TWAIN MANAGEMENT

You can access functions of the TWAIN system directly from Aura. This is a common interface used by digitizing hardware like scanners.

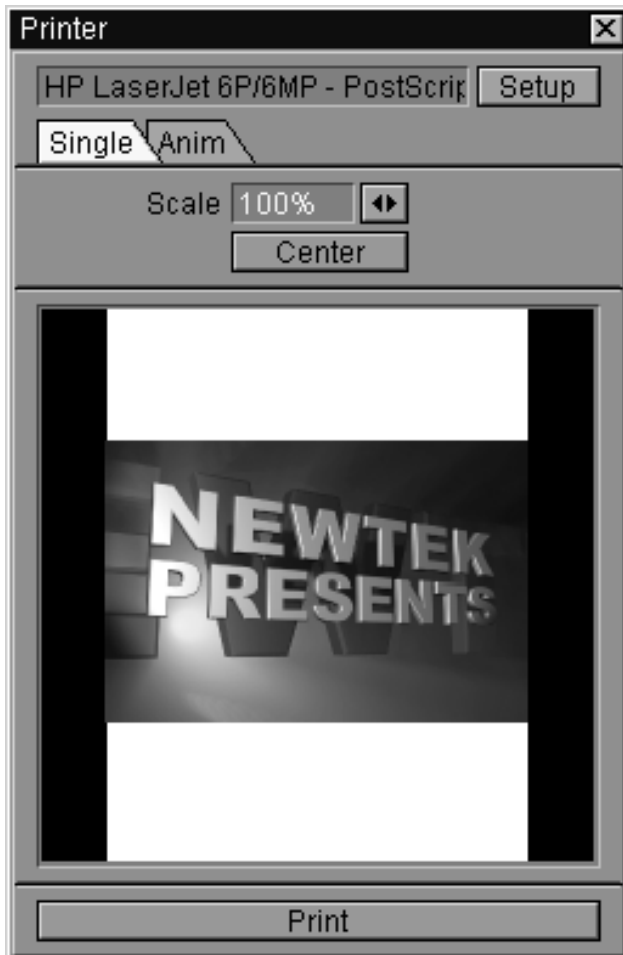
WARNING In order to use the **File > TWAIN** options, **Select** and **Acquire**, The TWAIN manager for your particular peripheral must already be installed in your system. (Consult the user manual for your equipment for more information.) Additionally, you must use a 32-bit version of the TWAIN manager. Also, multiple simultaneous scanning is not supported.

To select the peripheral, choose **File > TWAIN > Select** and choose your desired peripheral from the list. Choose **File > TWAIN > Acquire** to digitize an image. The dialog box that appears will vary depending on the peripheral used. (For more information, refer to its documentation.) After digitization, the image appears on your Aura working page ready for modification.

PRINTING

To print the current project select **File > Print**. The currently selected printer appears at the top of this panel. If you click on the **Setup** button, you launch the settings dialog box for your system printer. (Alternatively, you can choose **File > Configure Printer**.)

If you select the Single tab, Aura prints the current frame. The preview window shows the placement of the image on the output medium, displayed in white (usually the printed page). Aura scales the image to fit the output size. You can reduce the image size using the **Scale** setting. If the image does not fill the entire area of the medium, you can change its position by dragging it with your mouse pointer. Click the **Center** button to re-center the image.



Options on the Printer panel for printing a single frame

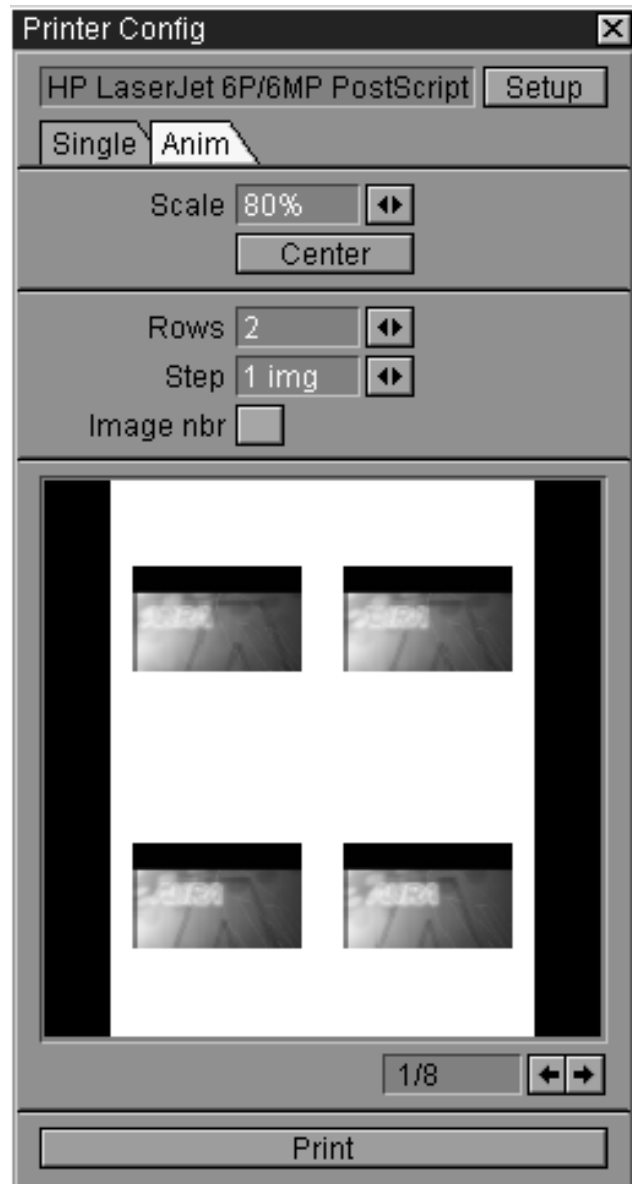
If you select the Anim tab, you can print a **storyboard** (sequence) of images. The **Rows** setting sets up a matrix with the same number of columns. Thus, a setting of 2 creates a 2x2 matrix. The **Step** setting controls how many frames to increment. Activate the **Image nbr** option to include the frame number beside each image. The control at the bottom of the panel lets you scan through the pages that will be printed out.

Click on the **Print** button to print with the current settings.

CLIPBOARD COMMANDS

To store the current custom brush or your current image in the system clipboard, select **Edit > Clipboard > Copy Brush to Clipboard** or **Copy Image to Clipboard**, respectively. When used with an animbrush, only the first frame is copied. Aura displays an error message if you select this function when there is no custom brush.

To use the contents of the system clipboard as a custom brush or new layer, select **Edit > Clipboard**



Options on the Printer panel for printing a storyboard

> **Get Brush from Clipboard** or **New Layer from Clipboard**, respectively. The contents of the clipboard will replace the current custom brush or the image will be placed in a new layer, depending on the option you select. You cannot use this function unless you have an image in the clipboard (i.e., no text, etc.). Aura displays an error message if the clipboard is empty.



NOTE Since these operations work with the system clipboard, image data can be shared between other applications as well.



NOTE By default, Aura writes the 32 data bits (24 color bits and 8 alpha-channel bits) of images present in the clipboard. This type of data may cause problems with some programs when you ask them to recover the contents of the clipboard (usually using their Paste command). However, you can force Aura to store only 24 color bits of the images in the clipboard. This can solve compatibility problems with other programs. (See the discussion on the Aura25.ini file in the Appendix.)

MANAGING THE SPARE IMAGE

The *spare* image is a storage space in which you can place an image in order to use it with certain drawing modes, filters or simply for temporary storage.

Choose **Edit > Spare > Swap spare** to switch the contents of the current frame (for the current layer) with the contents of the spare image, or use the J key. Choose **Edit > Spare > Copy to spare** to copy the contents of the current frame and place it into the spare image. The former contents of the spare image are deleted. Choose **Edit > Spare > Delete spare** to delete the spare image.

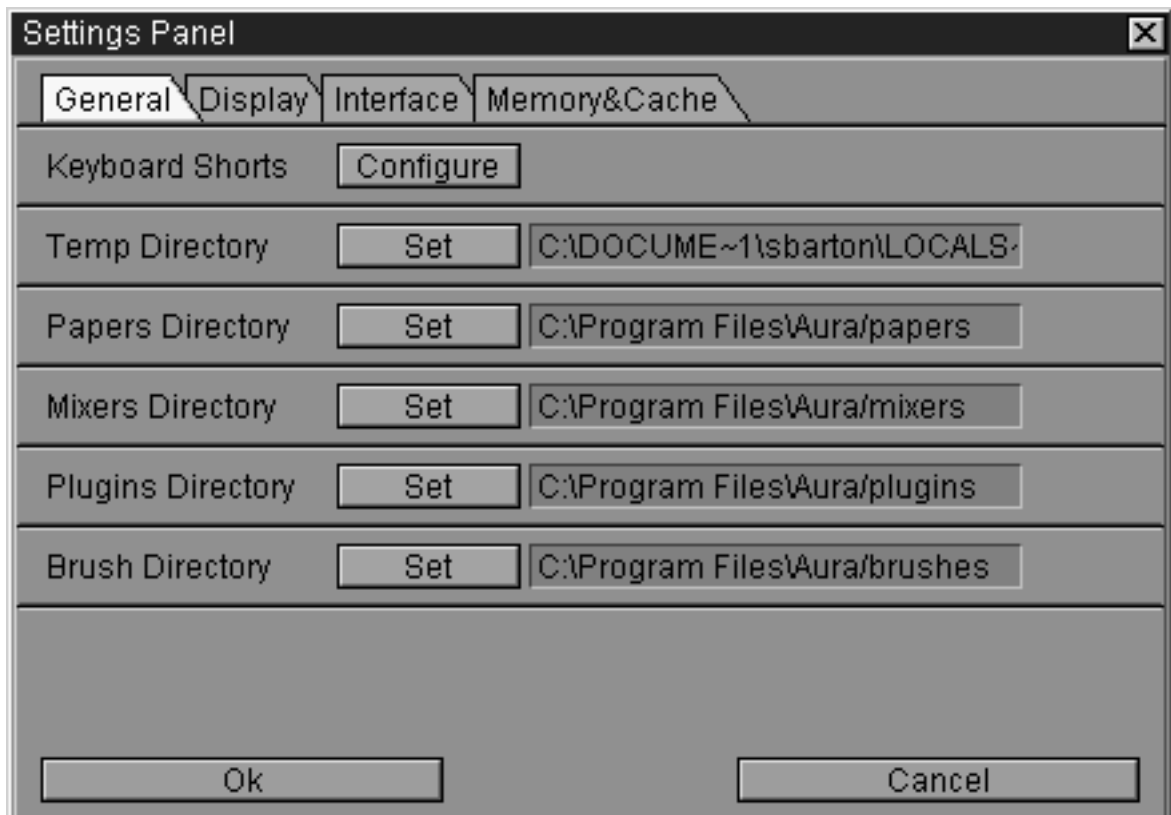
PREFERENCES

Aura offers various options that allow you to customize the operations of its interface, tools and functions. These options are found on the Edit menu. Choose **Edit > Settings panel** to launch the Settings panel.

Settings Panel: General Tab

On the General tab you can set the default directory location for the listed types of files. Aura stores the current project partly in memory and partly on your hard disk. Storage on the hard disk is done in a file, which is located in the **Temp location**.

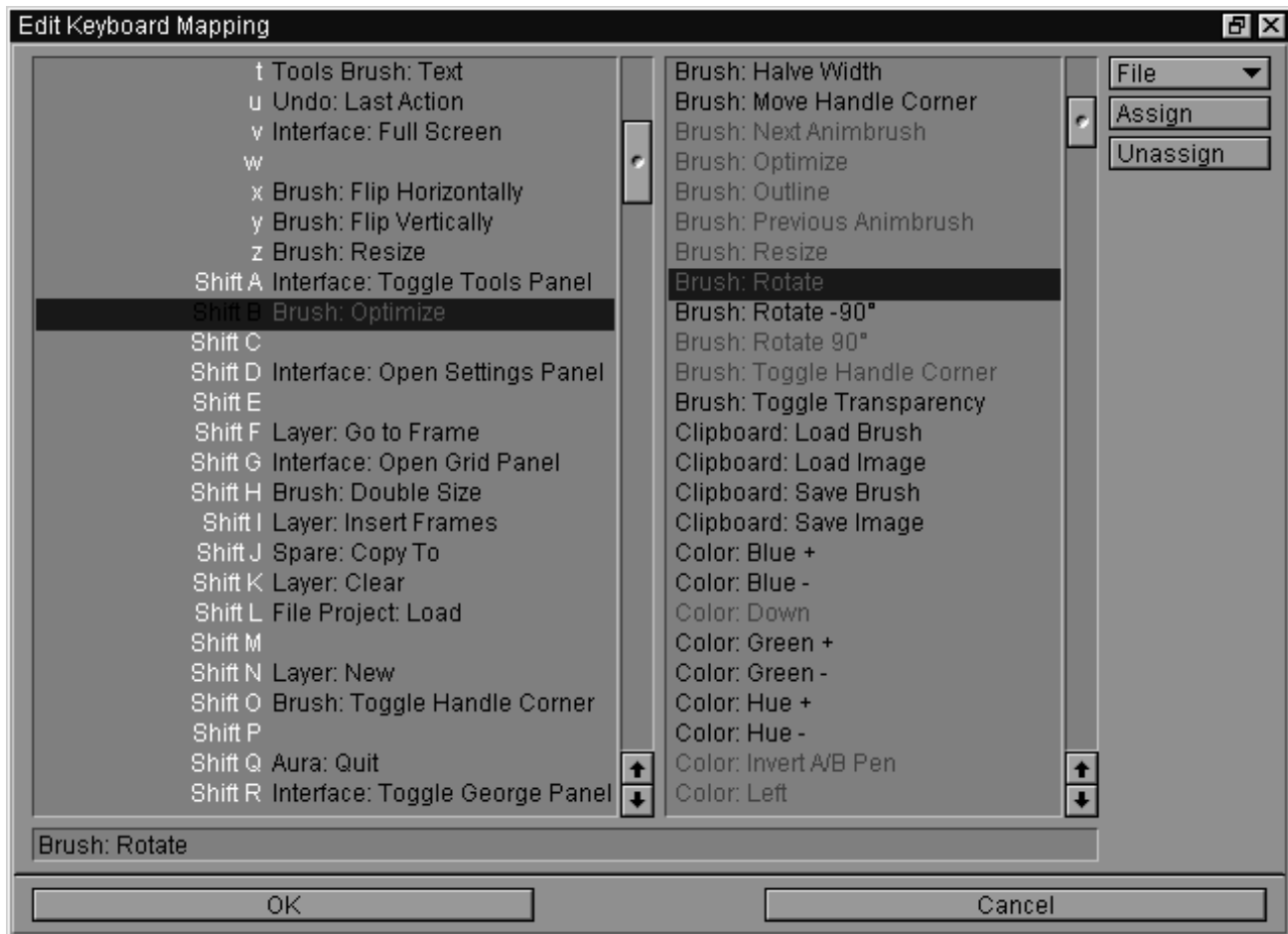
By default, Aura uses your system temporary directory; however, you should select your drive with the most free space. Your project can use quite a bit of data, particularly if you edit video files. If you have more than one (physical) hard drive, for maximum performance, set your **Temp location** to a drive other than that used for your system temporary directory. The temp file should also be on a drive separate from the drive Windows uses for virtual memory. You should also use your fastest drive, if possible.



The Settings panel; General tab

Keyboard Mapping

Click the **Configure** button beside Keyboard Shorts to display the Configure Keyboard Shorts panel. Here you can map Aura functions to specific keys or key combinations.



The Keyboard Shorts panel: the left list shows current assignments while the right list shows available functions.

The list in the left window displays the current keyboard assignments. Keys are indicated in white and assigned functions are indicated in black. The list on the right displays all assignable Aura functions. Functions currently mapped to a key are ghosted while unassigned functions remain in black. If you click on an assigned function (in the right window) the keyboard assignment is displayed in the informational field at the bottom of the panel. Aura updates keyboard shortcuts dynamically when you change assignments or load a keyboard map (discussed next).



NOTE When applicable, Aura displays keyboard shortcuts on the main menu.

To assign a function to a keystroke:

1. Highlight a keystroke in the list in the left window.
2. Highlight a function from the right window list. The

Assign button to the right of the windows becomes active.

3. Click on the Assign button to map the key to your chosen function. If the keystroke already has an assignment and you wish to add to it (instead of replacing it), hold the Ctrl key as you click Assign.

This way, you can assign multiple actions to one key. For example, you could map Layer:make anim and Layer:select all to the a key. If two commands are mapped to one key, you can see the commands joined by a plus sign in the information field at the bottom of the panel.

To unassign a keystroke:

1. Highlight a keystroke in the list in the left window.
 2. Click on the Unassign button.
- You can save all of your settings for keyboard mapping to a file from the File pop-up menu and you can load previously saved settings. Different users can

access personalized shortcuts. Or if you're feeling wild, you can challenge yourself by loading a different keyboard map each day.

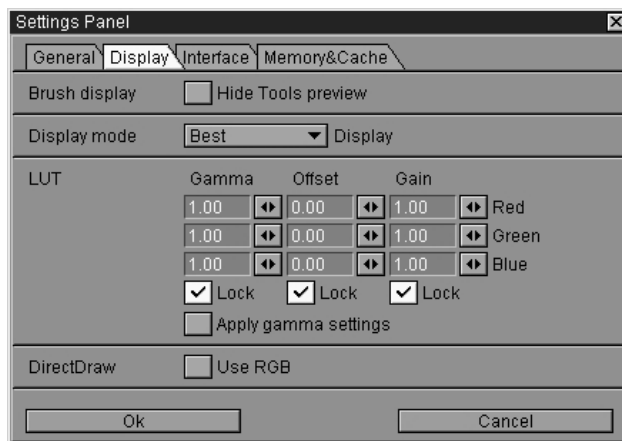
Select **Default Keymap** to change all assignments to their default settings. Clear Keymap performs a global removal of all assignments from all keys and key combinations, leaving you with a clean keyboard map to rebuild in whatever combinations suit you.



HINT Aura has many helpful keyboard shortcuts mapped by default. There are also many functions that are not mapped to specific keys. You may want to spend a little time reviewing both windows on the Configure Keyboard Shorts panel.

Settings Panel: Display Tab

Generally, when you draw you will see the shape and color of your brush attached to your mouse pointer. Activate **Hide Tools Preview** to show only the mouse pointer.



The Settings panel; Display tab

If you use a 16-bit display mode on your system, the **Best** display mode automatically dithers your display. This may be helpful when viewing 24-bit images. Choose **Fast** display if you don't want the dithering. **Best** is the only option for 24- or 32-bit display modes.

The **LUT** area lets you to add a Look Up Table over the project display. You use this feature primarily for calibration (TV Gamma, Cineon File). Project data is not affected; LUT affects only the display.

Gamma is a coefficient that determines the brightness of the colors in the monitor display. The default value of this coefficient is 1.00. With higher values (1.8 is a typical value for CMYK printing) the image looks lighter, and with lower values it looks darker. The gamma settings are used to recalibrate your monitor only. They never change the actual colors of the image saved on the disk.

Offset lets you shift the colors in the monitor display. Essentially you change the hue when you set a specific value in the offset field.

Gain can be equated to the saturation, or intensity of your colors in the display. Normally you keep the default value of 1.00. Higher values add more saturation and lower values decrease saturation.

Apply Gamma Settings to enable the LUT values that you entered. **Lock** links the primary colors (RGB) together.

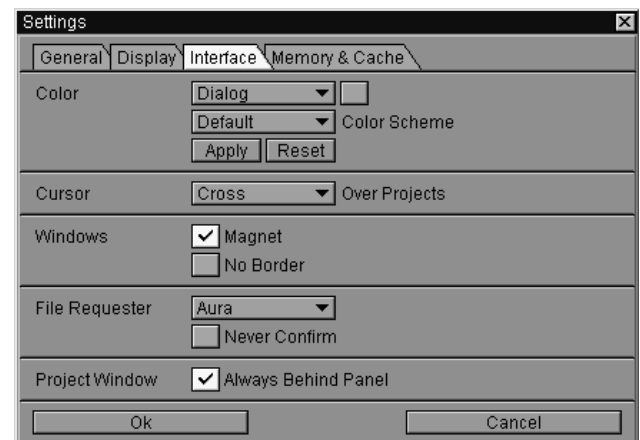


WARNING Use great caution if you adjust LUT. Example situations include a poorly adjusted monitor with internal controls or no controls at all, standardizing the display of images using different videocard and monitor combinations, etc.

The **DirectDraw** option gives you support for graphics cards that do not allow YUV display. If your graphics card does not allow YUV display, select the **RGB** setting beside **DirectDraw**. You can then see your video in the project background.

Settings Panel: Interface Tab

From the **Color Scheme** pop-up menu, you can select from several preset color schemes for the Aura interface. You can modify individual settings by first choosing one in the pop-up menu above the **Color Scheme** pop-up menu and then selecting a new color with the color selection button directly to the right. Click the **Reset** button to reset the colors to the defaults of the selected **Color Scheme**. You must click the **Apply** button to apply any changes.



The Settings panel; Interface tab

The **(Cursor) Over Projects** setting determines what your mouse pointer looks like when it is over a project window.

The **Magnet** windows option makes it easier to align floating panels with each other. As you drag a panel near another, its edge will snap, or **dock**, to the

edge of the other panel. The **No border** option hides the title bar and gives you just a little more space for your working page – particularly if you undock the menu bar as well.

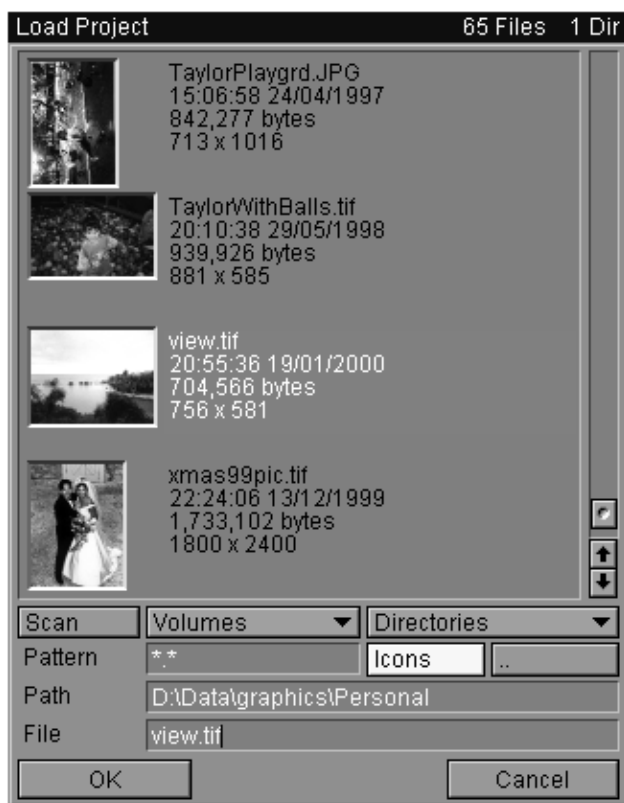
You load and save files using file requester dialogs. These requesters provide access to the various drives on your computer (hard disk, CD-Rom, etc.) and allow you to navigate their directory structures. The **File Requester** settings let you choose between your standard system file requester or Aura's custom file requester, discussed below.

The **Never Confirm** option, when active, will suppress confirmation dialogs when erasing or overwriting files.

If you want to be able to place a project window in front of Aura panels, deactivate the **Always Behind Panels** option.

Operating the Aura File Requester

Files in the current directory appear in a scrollable list in the upper portion of the requester. The current directory is identified by the **Path** input field. When the **Icon** button is active, certain file types, like Aura project, DEEP, ILBM, and TIFF format files, may automatically display a thumbnail image as the file icon. To the right of the icon are the filename, creation date and time, file size, and, if applicable, file resolution and number of frames (for animations). Deactivate the **Icon** button to show only filenames in the list.



The Settings panel; Display tab

When the icon is an exclamation point, Aura recognizes the file format, but no thumbnail is available. You can display a temporary thumbnail and preview the image by clicking on the item with your RMB. For animations, you can play a preview by right-clicking the icon. If the icon is a black question mark, Aura does not recognize the file format.



NOTE For information on the preview window that appears when you right-click on an item, please see chapter 7.

Click the **Scan** button to update/create the icons for all recognized files in the list. This does not re-read the directory, however. To do that, click in the **Pattern** input field and press the Enter key. Aura temporarily retains scanned thumbnails during your Aura session.



NOTE Aura is more advanced than most paint programs in that it does not rely on the filename extension to determine the file format. For example, Aura will automatically recognize and load a JPEG format file called Picture.gif. Of course, such naming will likely cause confusion if you plan to use the image in other applications.

From the Volumes pop-up menu you can select the hard drive partition, CD-Rom drive, removable device, etc. You select a subdirectory (folder) in the current directory with the Directories pop-up menu. Clicking on the .. button takes you to the parent directory, if you are not in the root directory.

You can manually input a full path in the Path input field using the form: Drive:\subdir\subdir. If you click in the Path input field, you can use your Up Arrowkey and Down Arrowkey to cycle through previously used paths.



NOTE If the number of items exceeds a certain amount, Aura replaces the pop-up menu with a scrollable window. Simply select the desired item and click OK.

The **Pattern** input field contains “*.*” by default. It uses the standard MS-DOS filename pattern matching conventions so an asterisk (*) is a multiple-character wildcard. As such, “*.*” lists all files that have a period (.) in their name. An asterisk by itself, “*”, will list all files, even ones without a period. “*.tga” will display only files with the file extension “.tga”. A question mark (“?”) is a single-character wildcard. “d???t??” will list all files four characters or less, starting with the letter D, whose file extension started with the letter T. So files like Doug.txt, Des.tif, etc. will be listed.

To select a file, double-click on it in the listing, single-click on it and then click **OK**, or enter its name in

the **File** input field and press the Enter key. To cancel the operation click on the **Cancel** button.



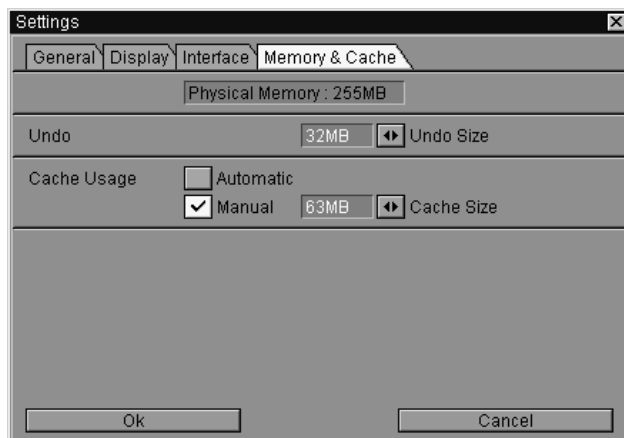
HINT It may take a little time to get used to the Aura file requester; however, it is highly recommended that you use it because of the additional information that it provides.



NOTE You must use the Windows File requester to access files on a network.

Settings Panel: Memory & Cache Tab

Here you can set the amount of memory to set aside for undos and data caches to your hard drive. Select **Automatic** to let Aura automatically manage the cache size.



The Settings panel; Memory and Cache tab



NOTE The location of the Cache data is set on the General tab using the **Temp location** setting.

VIDEO GRABBER

You access the Video Device panel by choosing **Windows > Video Grabber**. This panel lets you choose a video source that you can grab for your Aura projects and a video output to which you can send an Aura project. You can also use the RMB on the **V** button of the project window to open this panel.

Video Input



Video Grabber panel: Input for Aura VT

You will normally select your VT[3] as the active device using the **Device** setting. The **Input** selection lets you choose the input from the VT[3] source, such as Program, DSK, and so on. **Format** will automatically correspond to your VT[3] project preferences.

The **Mix** field lets you mix the value between the video background and the current Aura project. When mix equals 0, your project sits over video, and when mix equals 100 the video sits over your project. Mix affects your Project window only when you set Video Background to enable.

Use the **Apply on** menu to specify where to store your grabbed images. With the **New Layer** you place the image on a new layer of your project. With **Current Layer** you place the grabbed image on the layer where you are currently working. If no frame is selected, Aura pastes the image after the current

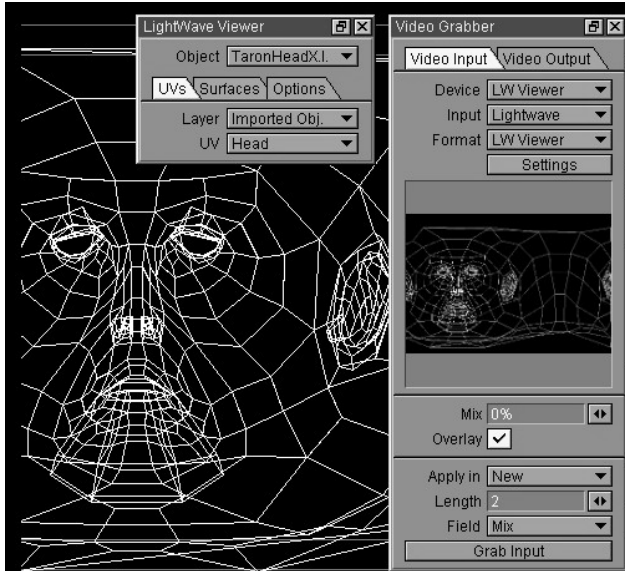
frame in the current layer; if a frame is selected, Aura replaces the current frame with the grabbed image.

The **Length** field defines the length of your grabbed image in frames. The default length of your grabbed image is 5.

The **Field** menu has options to set how Aura handles fields. **Double** grabs fields as they are; it does not change them. **Odd** mixes fields with odd first (for NTSC sources). **Even** mixes fields with even first (for PAL sources). **Mix** blends the fields together.

Click on **Grab** to grab frames from your video input. All functions for **Grab** can be accessed by shortcuts; for example you can set **Grab** to respond to a footpedal or an external keypad for a stopmotion animator.

The Video Grabber **Device** option also lets you select **LW Viewer**, to access data from the LightWave® Viewer plug-in. This enables you to use Aura to view and modify surface texture imagery for objects currently loaded in LightWave3D® (when the LightWave hub is enabled).



Video Grabber panel: Input for Aura VT

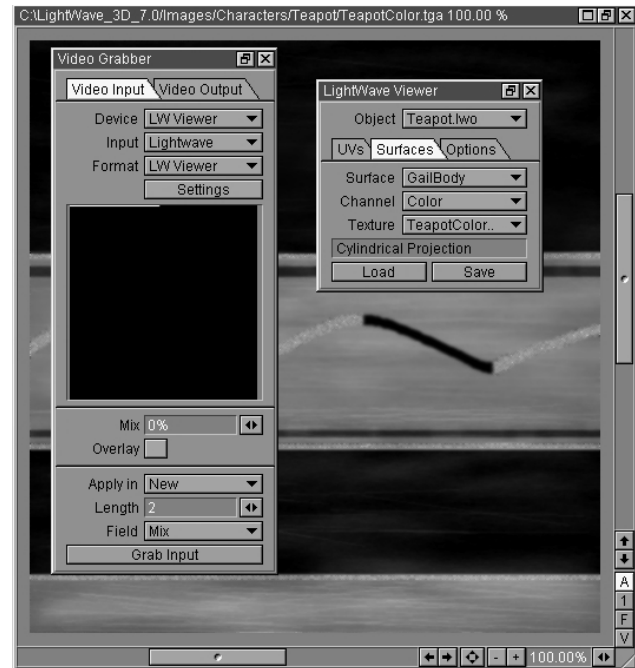
When the LW Viewer is selected, the **Settings** button opens a panel named LightWave Viewer offering a number of options. The **Objects** menu is used to designate the LightWave object whose surfaces you wish to work with. For an object which has UV maps assigned, you can use the two options under the **UVs** tab to designate which UV map you wish to work with.) When a UV map is selected, the **Overlay** option will become available in the Video Grabber panel, enabling you to view the current UV map over your Aura project window, where it can serve as a guide to creating your texture maps.

The **Surfaces** tab permits you to specify an active **Surface**, surface attribute (**Channel**), and image (**Texture**) of the selected object for editing in Aura.

The **Load** button loads existing surface images into a new Aura project scaled to fit them. **Save** overwrites the original texture image.



HINT You may find it necessary to use LightWave's image Replace function to update the texture held in LightWave.

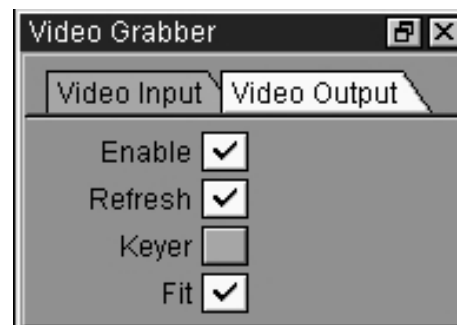


Video Grabber panel: Input for Aura VT

The **Options** tab reveals a panel allowing you to set the location on your system of the LightWave configuration file. Aura must be able to locate this file for the plug-in to function. The file is named lx3.cfg, and is normally located in your personal user folder within C:\Documents and Settings. You can also set the **Color** used for LightWave UV map overlays under this tab.

Video Output

Enable makes Aura's imagery available to your VT[3] device. With **Refresh** enabled, you get realtime output on your display device. When you deactivate



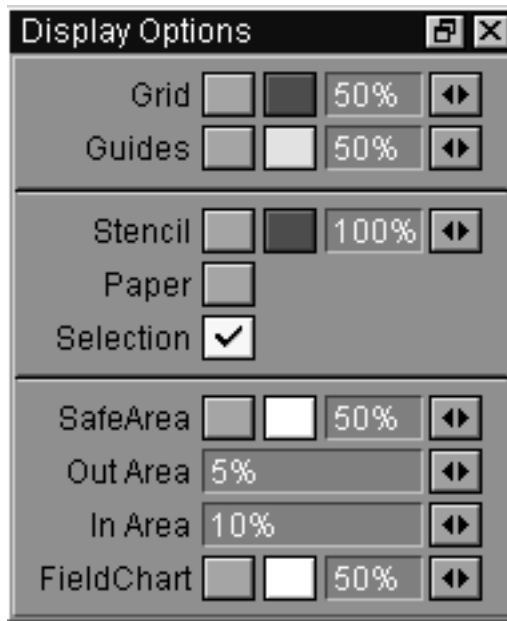
Refresh, Aura updates the output only when you release the mouse. You can access shortcuts for Video Grabber by clicking the RMB over the **V** button from the project window.



NOTE This option is mandatory if you are to see Aura output on the VT[3] Program output when you select AuraVT as a source in the Switcher panel or DSK.

DISPLAY OPTIONS.

The Display Options panel, which appears when you choose **Windows > Display Settings**, sets the visibility attributes for certain drawing features.



The Display Options panel

You can make the **Grid** and/or **Guides** visible from this panel. You can also change the line color and intensity from this panel. These options, discussed later in the chapter, affect only the display of these features and don't enable them.

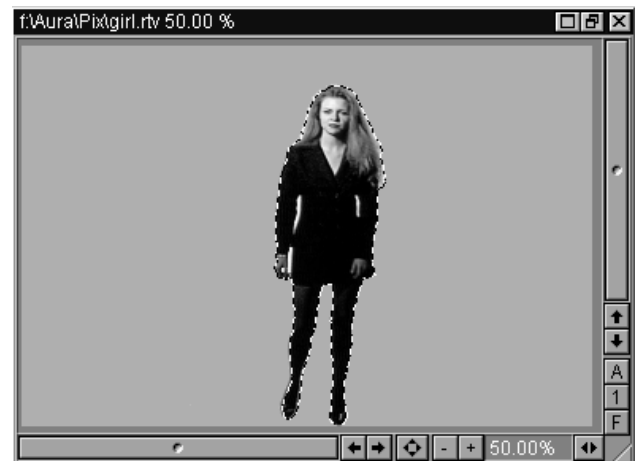
A **Stencil**, discussed in Chapter Seven, is used to mask out drawing areas. You can make the stencil visible, as well as adjust its color and intensity.

Paper, discussed in Chapter Six, is like drawing on selectable surface. If you want the paper surface visible on the background, activate this option. Paper is visible only if you can see some portion of the background.



Project with Paper background

If you want to see the *crawling ants* outline for selected areas, activate the **Selection** option.



'Crawling ants' selection outline

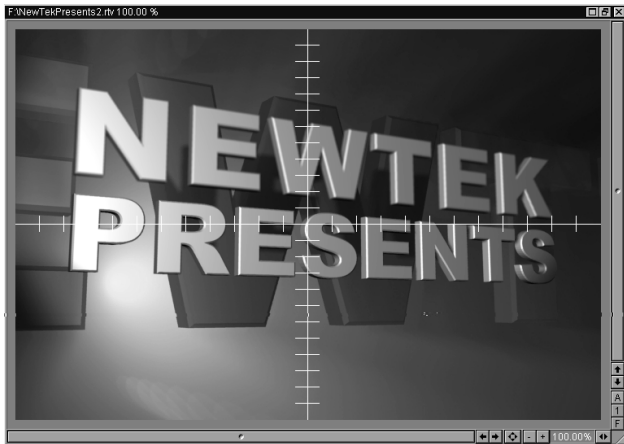
If your animation will be viewed on a television, be aware that viewers will not see the entire image. Activate **Safe Area** to display outlines that indicate the safe text (the inner border) and safe action areas (the outer border) for television. To allow for the differences in the display of different brands and designs of television sets, you should use this guide to ensure that text and action elements of your animations remain on screen when it is important that they be seen.



Project with Safe Are display activated

You can adjust the color and intensity of the lines, as well as adjust the relative positioning of the two borders by adjusting the **Out Area** and **In Area** settings from their default values of 5% and 10%, respectively.

The **Field Chart** option activates a crosshair chart similar to a 12-field chart as used in the film industry. It divides the camera view into quadrants, and each quadrant has 12 segments.



Project with Field Chart activated

VIEW OPTIONS

You have several options on the **View** menu that affect how you work on a project.

Multiple Views

Choose **View > New zoom window** to open another project window for the current project. You can open multiple windows for a single project. Use this to view different zoom levels simultaneously. You can edit the project from any of the windows.

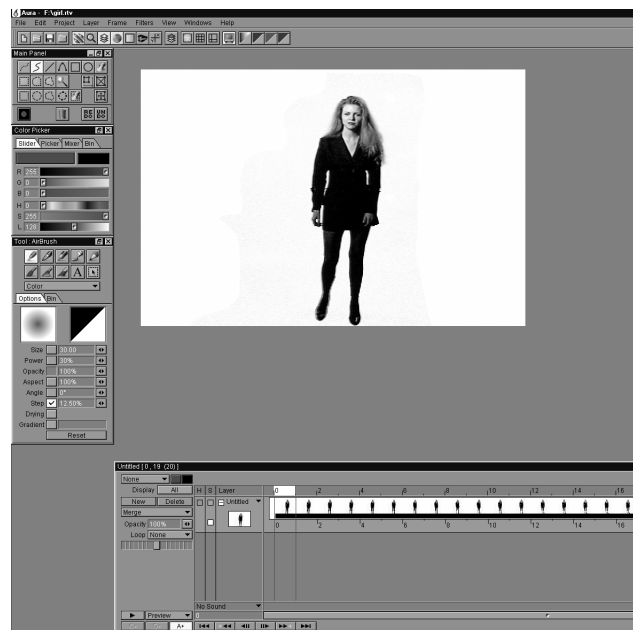
Full Screen Mode

The Full Screen mode is an alternative to working in a project window. You have less control over how Aura displays the image in this mode. You activate the Full Screen mode by clicking its button on the menu panel or by choosing **View > Full Screen**.



The menu panel with Full Screen icon indicated

The image in the last active project window appears in the top-left corner, probably beneath some panels. You can reposition it by holding the Alt key and dragging the image. You can interactively zoom in or out by using Alt RMB.



Project in Full Screen mode

To switch between projects in Full Screen mode, just select a project from the bottom of the **Windows** menu. To switch back to the Windows mode, deactivate the Full Screen button or choose **View > Windows**.



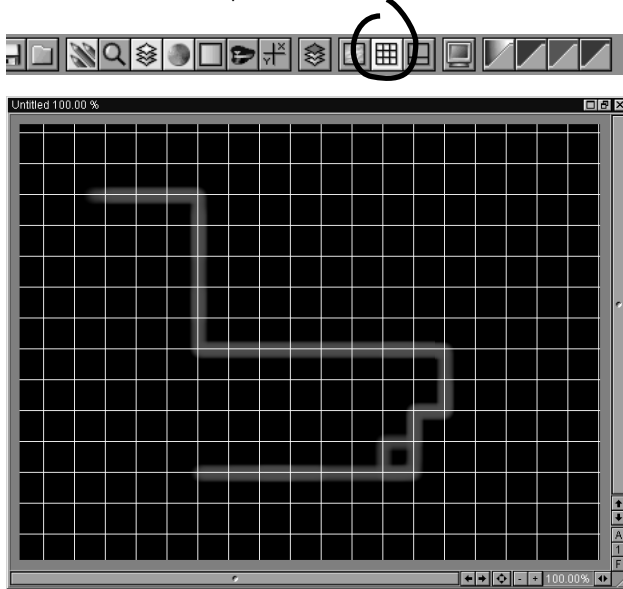
NOTE You can use the same keyboard shortcuts/menus used in a project window to zoom and pan.

The Full Page Display

The **View > Show Full Page** function displays the entire project on your screen, scaling the image down if necessary. This is simply a preview mode – you cannot draw in this mode. Click your LMB to return to the original Aura display.

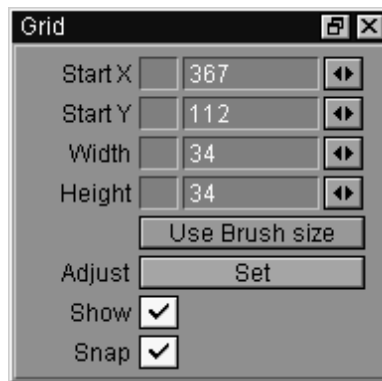
THE GRID

The grid constrains drawing to the intersections of a grid. Your mouse pointer then tends to move from one intersection to the next, rather than from pixel to pixel. To activate the grid, simply select the Grid button from the Menu panel.



Project with Grid option activated

Clicking on the Grid button with your RMB will open its settings panel. The **Start X** and **Start Y** settings define the coordinates of the grid origin point. This allows you to move the grid within an image without changing its size. The **Width** and **Height** settings represent the horizontal and vertical spacing in pixels between each grid line.



Grid settings panel

Click the **Set** button to graphically define the above grid settings. Simply drag your mouse pointer to determine the grid origin and size.



NOTE You may want to deactivate the Grid function before using the **Set** option.

Click the **Use Brush Size** option to use the dimensions of the current brush as the grid dimensions. Setting this option allows you to quickly fill in an image with several copies of a brush in a checker-board pattern.

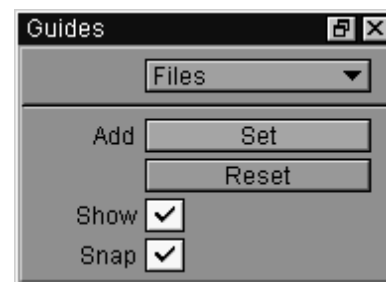
The **Show** option controls the display of the grid. (See also the previously discussed **Display Options**.) The **Snap** option enables the grid's influence. Aura automatically activates both of these options when you activate the Grid button on the Menu panel.

GUIDES

Guides, similar to grid lines, force drawing functions to occur along defined lines. This is great for aligning text and graphics. To use guides, activate the Guides button on the Menu panel.



Clicking on the Guides button with your RMB will open its settings panel.



Grid settings panel

To create a guide, click the **Set** button. When you drag your mouse over the image, you automatically create vertical and horizontal guides that intersect at your mousepointer.



Project with Guides activated

To create just a vertical or horizontal guide, keep your mouse pointer on the grey area bordering the image.



Moving the guides



NOTE You can create multiple guides.

Click the **Reset** button to clear all guides.

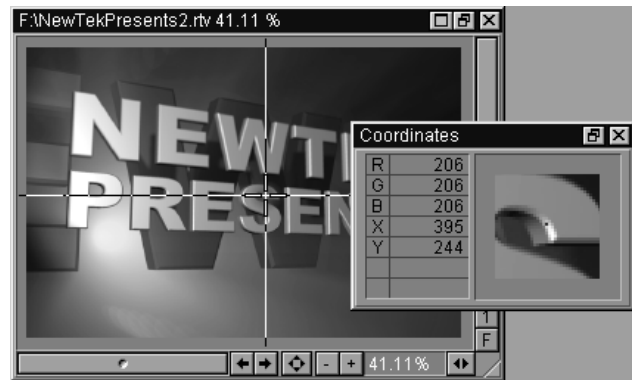
The **Show** option controls the display of the guides. (See also the previously discussed **Display Options**.) The **Snap** option enables the guides' influence. Aura automatically activates both of these options when you activate the Guide button on the Menu panel.



Example using guides to place text

DISPLAYING COORDINATES

When you choose **Windows > Coordinate Panel**, a small panel appears. In the panel you can read the position of the mouse pointer in the screen (X, Y) and the color values underneath the pointer (RGB). If your pointer moves off the image, the appropriate values are highlighted in yellow. If you use the Shift key to lock axes (discussed in the next chapter), the locked axis is highlighted in yellow. A small preview area provides a magnification of the area surrounding the pointer.



The Coordinates panel

The two rows at the bottom show context-related info, like length and angle for lines and splines, width and height for rectangles, A and B (two radii) for the ellipses, etc.

Notes:



Chapter 3: Drawing and Selection Functions

DRAWING FUNCTIONS

The drawing functions determine the shape of what you draw with the various drawing tools, discussed in the next chapter. For example, when you draw freehand lines, rectangles, or other shapes, Aura's selection function lets you define areas to work on and define restricted areas.

Some of the drawing function buttons have multiple states. Successive clicks will cycle through the available functions. For the drawing functions, this is usually an outline and a filled option.

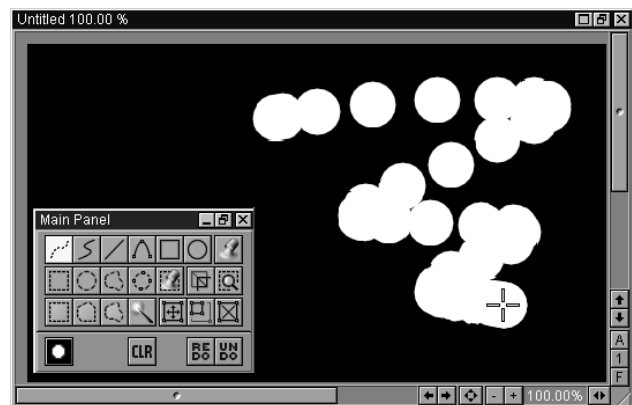
You can apply the current shape with the Enter key; you select the shape, color and drawing mode you want and Aura applies it in the current layer. You can change layers – and even change colors and drawing modes – and apply the shape in multiple layers using the Enter key. Holding your Shift key down will constrain your mousepointer direction (in increments of 45 degrees) based on the initial direction of movement. If you click a drawing function with the RMB, Aura brings up its settings panel. Note that you can designate an RMB simulation, where you access the RMB with a specific key. You set the simulation as a keyboard shortcut, (see Chapter 2); Wacom tablet users may find this shortcut handy.



HINT Use the Shift key feature to help you create perfect circles and squares.

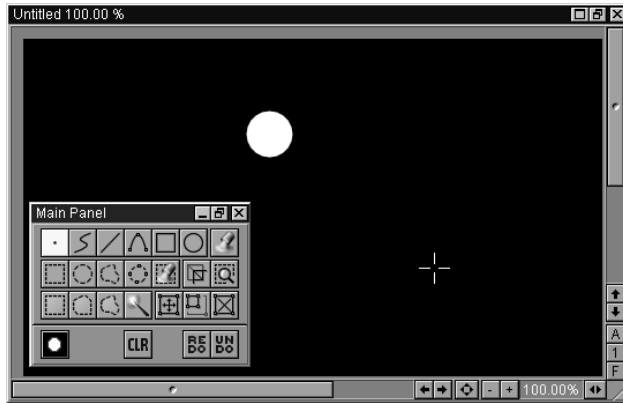
DRAWING DOTTED FREEHAND LINES

Activate the Freehand dotted line function to make a dotted line with the current brush and current drawing tool (i.e., Pen, Mechanical pencil, Brush tool, etc.). When you draw the line, Aura applies the brush in the image at the location of the pointer. As soon as you finish the operation, Aura will apply the brush again at your new pointer position, and so on. The application speed of the brush varies depending on its size and selected options. The spacing between the various brush applications varies depending on the time necessary to draw the line and the pointer displacement speed.



Drawing with a Dotted Freehand Line

The Freehand dot function makes a single instance of the brush when you first click.



Drawing with a Freehand Dot

DRAWING CONTINUOUS FREEHAND LINES

The Freehand function lets you draw a free form line with the current brush and current drawing tool (i.e., Pen, Propelling pencil, Brush tool, etc.). Unlike the Dotted Freehand Line function, Aura applies the brush continuously between each position of the mouse pointer as you drag.



Drawing with a Continuous Freehand Line



NOTE When using complex or large brushes, you may need to draw using slower mouse movements.

DRAWING FILLED FREEHAND SHAPES

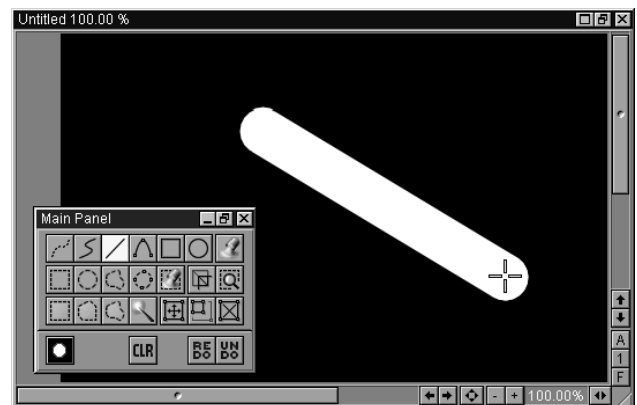
The Freehand Filled shape function is simply a filled version of the Freehand function. When you release the mouse button, the first and last points of the line are connected by a straight line and Aura fills all surfaces delimited by this outline. The fill takes into account certain options, such as color range, opacity mapping, and so on.



Drawing with a Filled Freehand shape

DRAWING STRAIGHT LINES

The Straight line function draws a straight line between two points using the current brush and current drawing tool (i.e., Pen, Propelling pencil, Brush tool, etc.). To draw lines, you drag your mouse pointer. The initial drag point is the starting point of your line. As you drag, an elastic line follows your pointer movement. The line ends wherever you release the mouse button.



Drawing with a Straight Line

DRAWING FILLED POLYGONS

The Filled Polygon function draws a filled polygon by defining an outline with a series of straight lines. The fill takes into account certain options, such as color range, opacity mapping, as discussed later.



Drawing with a Filled Polygon

Creating a Solid Polygon

Your first click in the work area defines the starting point, then an elastic line follows the movements of your pointer. Each successive mouse click defines another vertex and a new elastic line begins from that point. Use any of the following options to complete the polygon:

- Click on the starting point with your LMB.
- Click your RMB.
- Press the Enter key.

With the final two options above, you draw a straight line between the first and last vertex of the polygon and Aura fills all areas delimited by the outline.

Erasing with a Solid Polygon

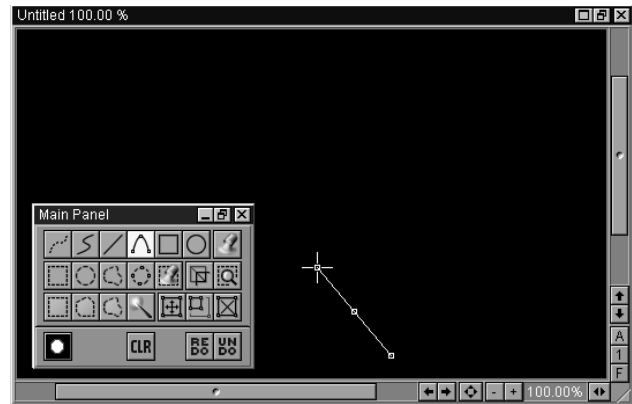
You can erase with a shape by using the Filled Polygon, which is similar to the cut brush function. Begin with the RMB, create your shape with successive LMB clicks and then choose one of the options above to close the shape. Aura erases the area in the current layer with your shape.

DRAWING SPLINE CURVES

With the Spline function, you can draw a smooth curved line using bezier curves.

To draw splines:

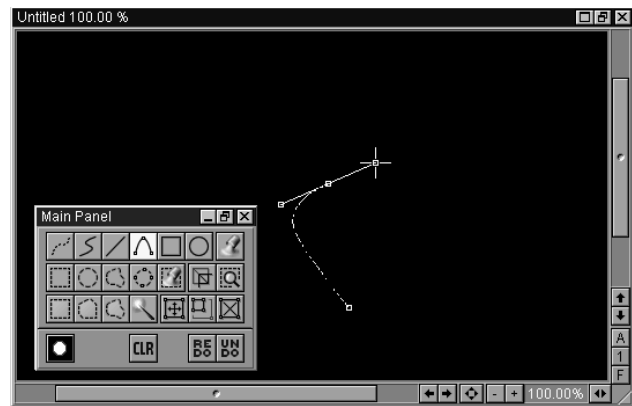
1. Begin by dragging out the initial tangent. Normally, you should drag out the tangent in the direction of curve.



Dragging the initial tangent for a Spline Curve

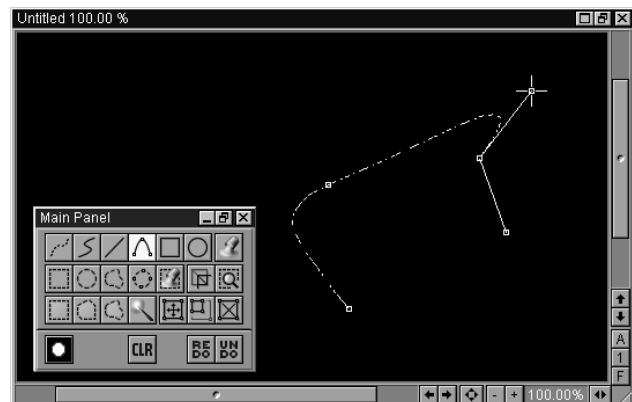
2. Release your mouse button. You can adjust the point's position by simply dragging it around. You can also adjust the tangent by dragging either end of the tangent.

3. Create the additional points by dragging out another tangent.



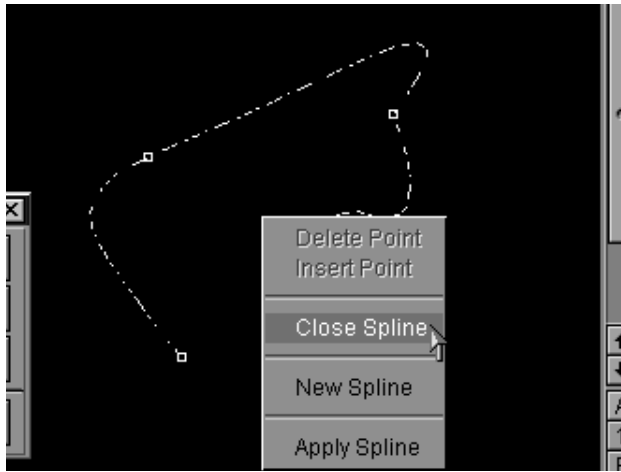
Creating the additional points for a Spline Curve

4. You can *break* a *unified* tangent by holding the Ctrl key while dragging one end of a tangent.



Breaking a unified tangent on a Spline Curve

5. If you want a closed curve, you can connect the two end points by selecting **Close Spline** from the RMB pop-up menu.



To clear the existing curve and start over:

Press the Esc key or select New Spline from the RMB pop-up menu.

To delete a point from a curve:

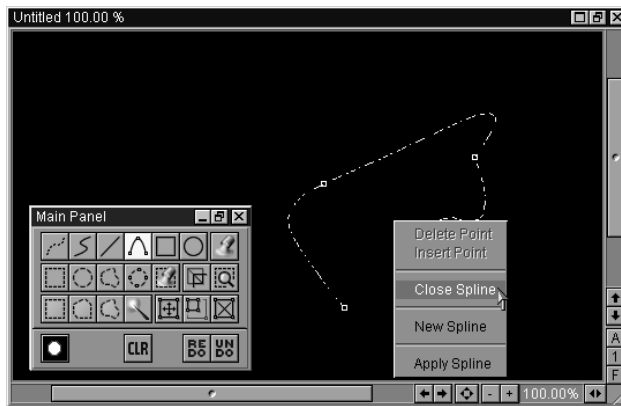
Place your mouse pointer over a point and select Delete Point from the RMB pop-up menu.

To add a point to a curve:

Place your mouse pointer over the curve and select Add Point from the RMB pop-up menu.

DRAWING FILLED SPLINE CURVES

You can draw a filled shape with spline curves using the same techniques described above. However, when you *apply* the curve, Aura fills the shape. If the curve is not closed, Aura fills the shape as if it were closed using the two end points.

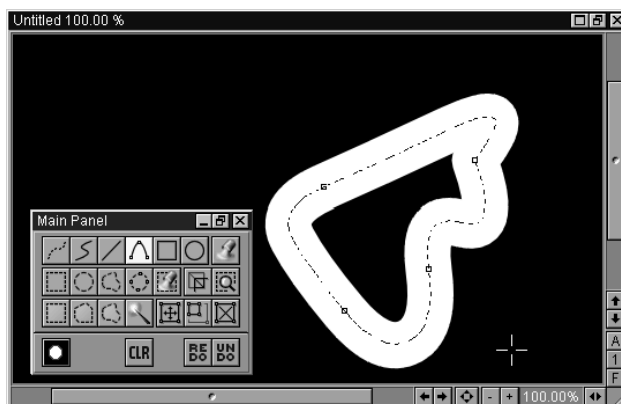


Closing a Spline Curve

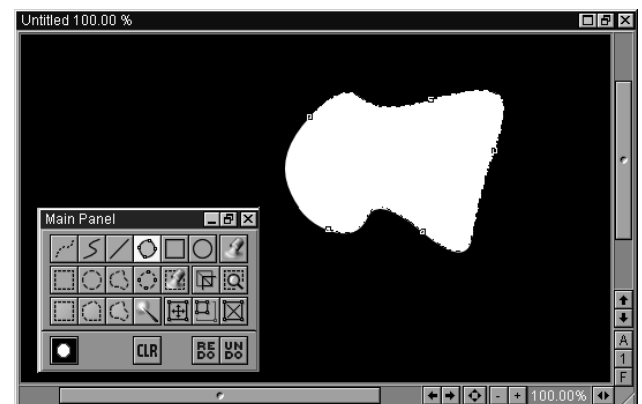
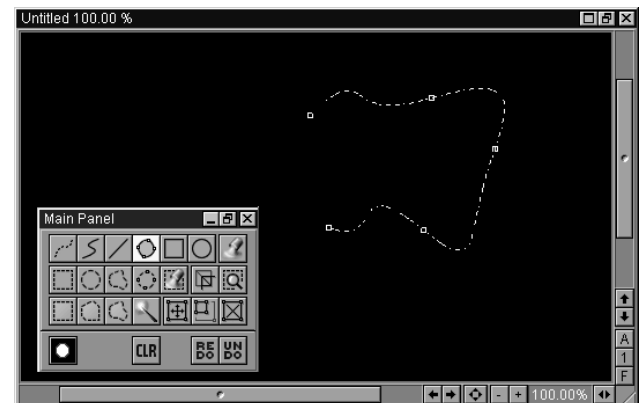


NOTE Splines do not have to be closed.

6. You can apply the current Drawing tool along the curve by selecting **Apply Spline** from the RMB pop-up menu or pressing the Enter key.



Apply the current Drawing tool along a curve



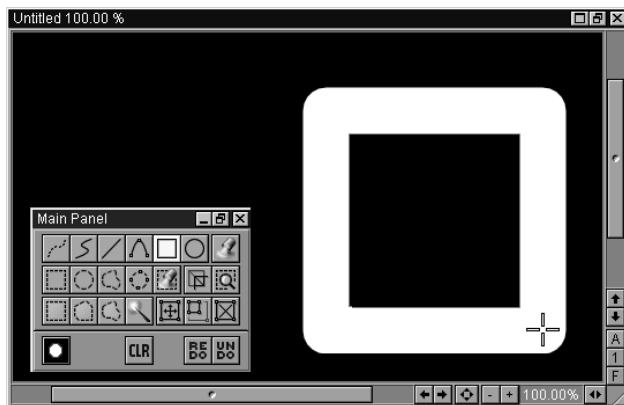
Drawing a filled Spline Curve

To move the entire curve:

Place your mouse pointer off the curve and hold the Ctrl key as you drag your LMB.

DRAWING RECTANGLES

The Rectangle function draws a rectangle outline with the current brush and current drawing tool (i.e., Pen, Mechanical pencil, Brush tool, etc.).

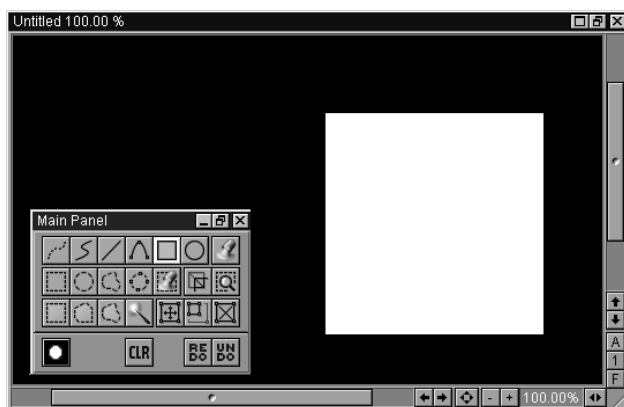


Drawing a Rectangle

When you first select the Rectangle tool, your mouse pointer changes to large crosshairs. The initial drag point is the first corner of your rectangle. As you drag your mouse, an elastic box follows the pointer movements – giving a preview the final rectangle. Release the mouse button when the pointer reaches the location you want for the opposite corner of the rectangle. The rectangle is then drawn.

DRAWING FILLED RECTANGLES

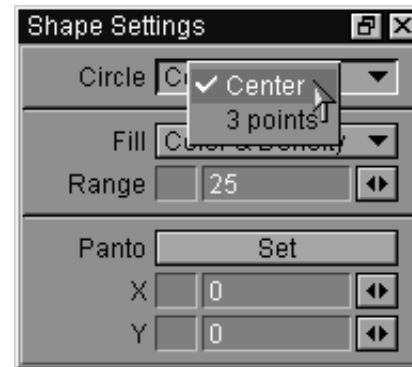
The Filled Rectangle function draws a filled rectangle. You use this function just like the regular Rectangle function, except the rectangle is filled when you release the mouse button.



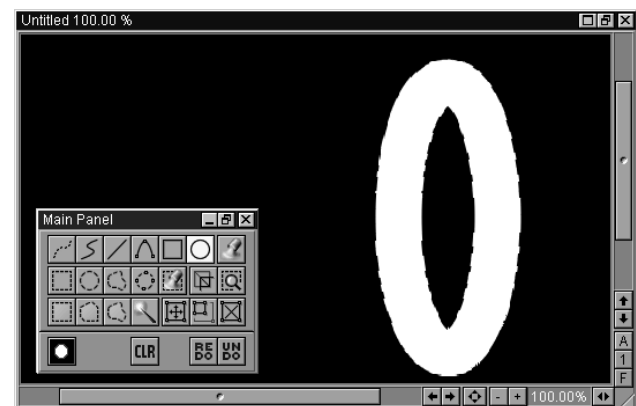
Drawing a Filled Rectangle

DRAWING ELLIPSES

The Ellipse function draws an ellipse outline with the current brush and current drawing tool (i.e., Pen, Mechanical pencil, Brush tool, etc.). You can set two different ways to define a circle with the **Circle** setting on the Shape Settings panel. This panel appears if you right-click on the Ellipse button.



Usually, you want to use the **Center** setting, which defines the initial drag point as the center of your circle. As you drag your mouse, an elastic circle follows the pointer movements – it shows you the appearance of the final circle. Release the mouse button when the circle is the desired size. Aura then draws the circle.



Drawing an Ellipse

When you draw a circle based on an existing circle in your image (e.g., a wheel), it is often difficult to find its precise center and radius. In such cases, you may want to use the **3 points** setting, which allows you to define a circle using three points on a circumference.

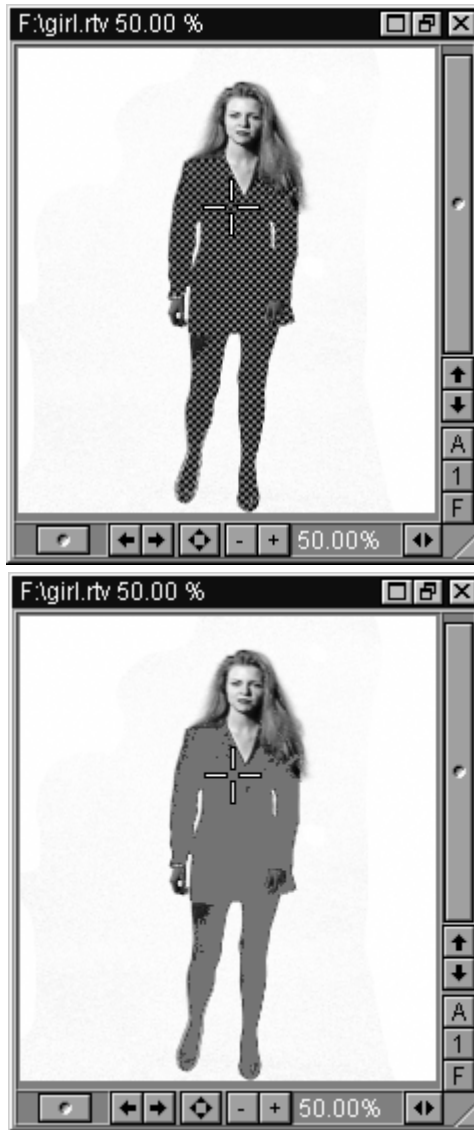
Click once to establish the first point on the circle's circumference. Then, as you move your mouse, an elastic circle follows your pointer movements. One side of the circle is locked to the initial point. Click again to set the second point. The elastic circle continues to follow your pointer movements, but the circle is locked to the two established points. Click a third time when the circle is the desired size. Aura then draws the circle.

DRAWING FILLED ELLIPSES

The Filled Ellipse function draws a filled ellipse. You use this function just like the regular Ellipse function, except Aura fills the ellipse when you release the mouse button.

FLOOD FILL

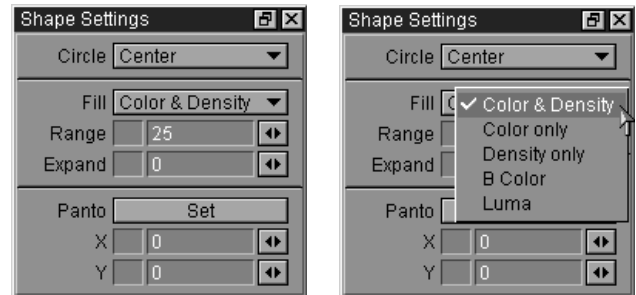
The Flood Fill function fills areas of the image with the foreground color. To use this function, select the function and then drag your mouse pointer in the area to be filled. As you drag around, you see the fill area displayed. Release the mouse button to complete the operation. Move your pointer off the image to abort. The *paint* spreads pixel by pixel (horizontally and vertically) to the (computed) bordering edges of the area.



Using Flood Fill to select and fill an area. Here the black clothing was selected and replaced with a lighter color.

Adjusting Fill Borders

Access the Flood Fill settings panel by clicking on its icon with the RMB. The **Fill** pop-up menu lets you tailor how the fill border is defined. **Color & Density**, (the default), stops the fill when the paint reaches a pixel with a color or opacity different from that of the start pixel. **Color only** stops the fill when the paint reaches a pixel that is different only by color – density is ignored. **Density only** stops the fill when the paint reaches a pixel with a different transparency level – color is ignored. **Luma** stops the fill when the paint reaches a pixel with a different luminosity level – color is irrelevant. **B color** stops the fill when the paint reaches a pixel using the B color.



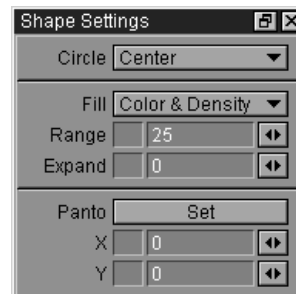
Left: The Shape settings panel. Right: Fill pop-up menu on the Shape settings panel



HINT Color only may sometimes work better when the filled shape has an antialiased edge because the pixels usually have identical colors but different density.

Border Tolerance Range

When **Range** is set to 0, any deviation from the initial pixel color is considered a border. Thus, if the initial pixel has an RGB value of 255, 0, 0, a pixel with an RGB value of 254, 0, 0 is considered a border. Setting **Range** to a higher value allows each of the RGB channels to vary by that amount before a pixel is considered a border. As such, if **Range** is 2, the colors (254,0,0), (253,0,0), (254,2,2), (0,2,1), etc., are not considered a border for an initial pixel color of 255, 0, 0.



Range set at 25 on the Flood Fill settings panel



NOTE A **Range** setting of 255 will result in no border detection.

With the **Expand** option, you can set an amount of pixels to expand the fill. You use this option to avoid artifacts from anti-aliased edges by filling up to or over the border.



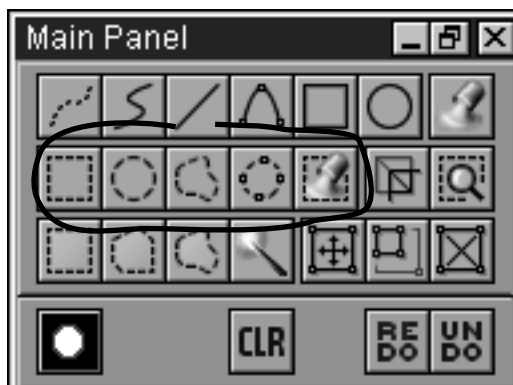
Left: Fill without Expand. Right: Fill with Expand of 1.

FILLING SHAPE OPTIONS

See Chapter 5 for information on filling shape options.

THE SELECTION FUNCTIONS

The selection functions allow you to create masks in various ways. All painting operations affect only the selection area. From left to right, the five buttons allow you to define a selection area using: a rectangle, ellipse (circle), freehand shape, spline and flood fill (magic wand).



Selection buttons on the Main panel

The selection functions work just like the related drawing functions discussed earlier in the chapter, except that they define a selection area. When a selection function is active, the Tool panel contains settings for selection operations.

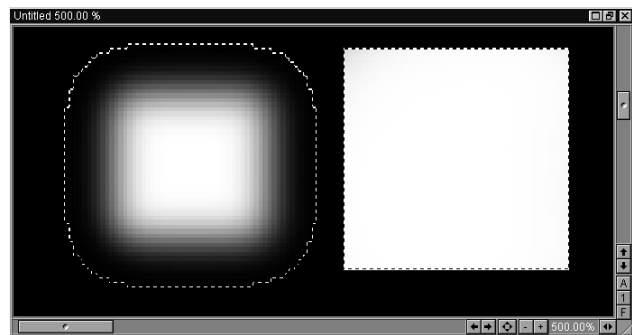
The top pop-up menu sets the action that occurs when you use the LMB. Generally, you will leave this set to **Add** because you can always use the RMB to subtract from an existing selection area. The **Sub** option lets you subtract areas from the existing selection each time you use it. **Replace** completely



Settings for Selection on the Tool panel

replaces the current selection with the new selection that you make.

The **Smooth** setting will *feather* the outside edges of selection areas that you draw. If you change the smooth setting, your change affects only new selections that you make. It will not affect existing selections.



Left: Smooth > 0. Right: Smooth = 0

Enable **AAliasing**, to apply default smoothing to the edges of your selection and eliminate stairstepping. For AAliasing, you do not need to enter a Smooth value, the default smooth action occurs automatically. When AAliasing is not enabled (and you do not use Smooth), the outline of your selection will not be smoothed.

To reverse the selection area, click the **Invert** button. To clear the selection, click the **Clear** button.

Using the buttons at the bottom of the panel, you can cut or copy the selection to a new layer or custom brush. Use the **Crop** button to crop the project using the selection for a new project.



NOTE If the selection area is not rectangular, a bounding box surrounding the selection area is used.

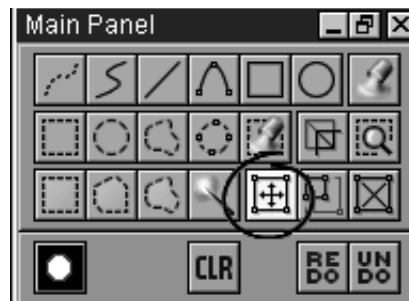


NOTE Aura's stencil function, discussed in Chapter 7, also allows you to limit the paintable area.

Remember that you can change the selection display to hide the crawling ants, as discussed in Chapter 2. You can find a tutorial on the selection tools, Lesson Eight, in the Aura content directory.

THE PANNING TOOL

The Panning tool is similar to the Transform tool. When you drag your LMB, you use the mode selected on the Tool panel. **Wrap** tiles the image as you drag to fill in the spaces and **Shift** does not tile the image. (Dragging with your RMB will use the **Shift** mode.)



Panning Tool option



Top: Pan with Shift mode
Below: Pan with Wrap mode

On the Tool panel, you have options to independently move the image and/or selection. You can also choose to activate or deactivate antialiasing. With AAliasing ON, you can pan at a subpixel level, which means you can pan at less than 1 pixel. With AAliasing off, subpixel panning is not available.



Settings for Panning on the Tool panel



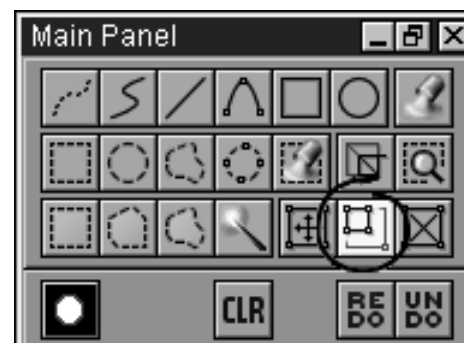
WARNING There is no Apply function, like on the Transform and Wrap tools. Changes are immediate. If you release your mouse button, you lose any part of your image that falls off the image area. Use undo to get it back.

Panning a Layer

1. Pan the single frame where you want it.
2. Hit undo.
3. Select the entire layer.
4. Hit enter to re-apply to entire layer

THE TRANSFORM TOOL

The Transform tool lets you manipulate your image or sequence interactively in the project. This is somewhat like cutting the entire image or sequence out as a brush, manipulating it, and then pasting it back down. This tool is great for sizing video for a picture-in-picture effect.



The Transform button on the Main panel

Using the Transform Tool

Import an image, then select the transform tool; the preview activates automatically.

To reposition the image, drag with your LMB.

To scale the image drag with your RMB.

To rotate the image, hold the Ctrl key and drag your LMB.

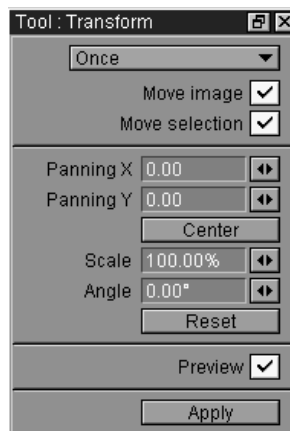


NOTE Rotation occurs only on the bank angle with the Transform tool.



Rotating and scaling an image with the Transform Tool

The Tool panel displays settings for the Transform tool.



Settings for Transform on the Tool panel

If you set the top pop-up menu to **Fill** instead of **Once**, you can tile the image (that is, you repeat the image horizontally and vertically across the work area).



HINT The fill mode works well with layers that have transparency; try placing a large logo in the center of the screen and then scale down the logo so it repeats.



Using the Fill option to tile an image with the Transform tool

You can independently set whether you move the image and/or selection area using options on this panel.

The **Panning X** and **Panning Y** values reflect the amount of horizontal and vertical movement, respectively. **Scale** sets the amount of sizing and **Angle** sets the amount of rotation. You can edit these fields manually, if you desire.

The **Center** button will center the image, retaining any scaling and rotation. Click **Reset** to reset the panel to its default values.

Click the **Apply** button to apply the settings to the image. If you select another function/tool without applying first, you will discard all settings.



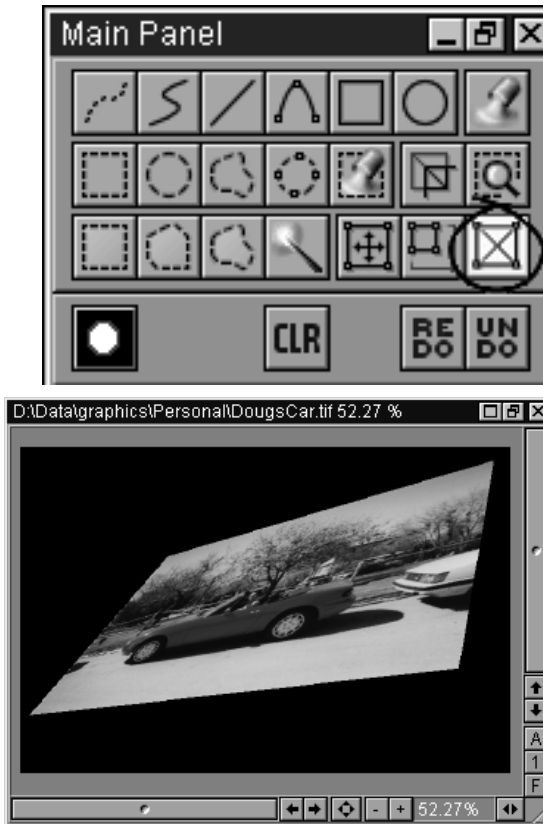
NOTE When you use layers, you affect only the current frame of the current layer unless you select other frames. To move an entire layer, you can also use the Panning filter (see Chapter 8).

Transforming a Layer

Select all frames in your layer, then turn on the Transform Tool. Move, scale or rotate the image. Hit **Enter** to reapply your transformation to the entire layer.

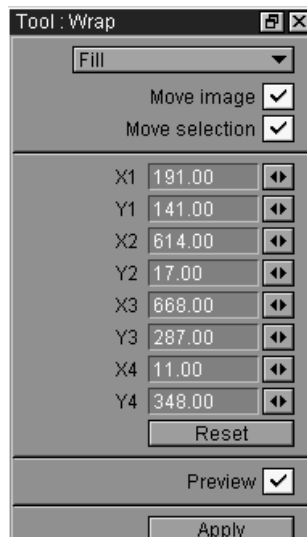
THE WRAP TOOL

The Wrap tool lets you stretch and scale an image by adjusting the position of its four corners. To move the entire area, click and drag with your LMB. To size the entire area, hold the Ctrl key as you drag your RMB.



Stretching and scaling with the Wrap tool

The Tool panel displays settings relating to the Wrap tool.



Settings for Wrap on the Tool panel

If you set the top pop-up menu to **Fill** instead of **Once**, the image is *tiled* (that is, it is repeated horizontally and vertically).



Using the Fill option to tile an image with the Wrap tool

You can independently set whether you move the image and/or selection area with options on this panel.

The four pairs of XY settings define the position of the four corners. (1 = top left, 2 = top right, 3 = bottom right, and 4 = bottom left) You can edit these fields manually, if you desire.

When the **Preview** button is active, which is the default, you can graphically adjust the bounding box around your image with handles at each corner. With **Preview** off, the bounding box disappears and you use only the fields on the Wrap tool panel to input numerical changes.

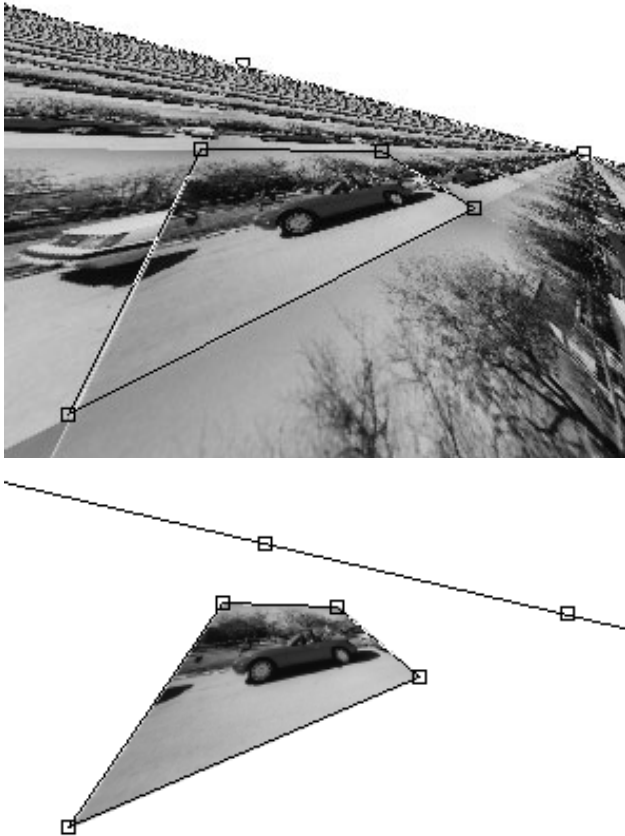
Click **Reset** to reset the panel to its default values. Click the **Apply** button to apply the settings to the image. If you select another function/tool without applying first, you will discard all settings.



NOTE When you use layers, you affect only the current frame of the current layer unless you select other frames. To wrap an entire layer, you can also use the Wrapper filter (see Chapter 8).

Vanishing Point

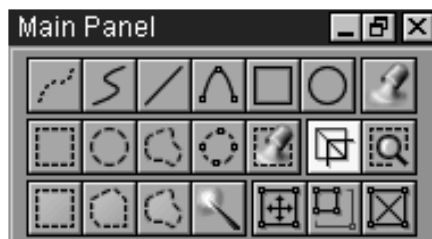
When you use this tool, the image eventually disappears off in the horizon at two points called the *vanishing points*. This may be outside the borders of your project window and, thus, not visible. If a vanishing point is within your project's borders, it appears as a small square. You can drag these points to alter the perspective shape.



Top: Fill mode. Below: Once mode

THE CROP TOOL

The Crop tool lets you select a portion of your image to cut out as a new project. When you select the Crop tool, Aura places a rectangular selection area in your image that you can move with your LMB. You can adjust the size of the selection area by dragging the lower right corner with your RMB, or you can specify values in the Crop tool panel.



The Crop button on the Main panel

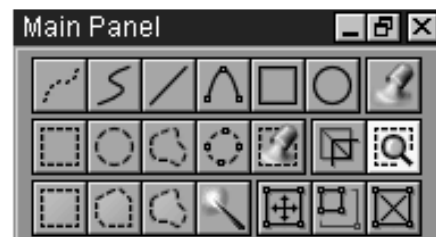
On the Crop tool panel, you enter the coordinates where your selection marquee begins in the **Begin X** and **Begin Y** fields. You specify the size of the selection marquee in the Width and Height fields. The **Lock Aspect** button is selected by default when you select this tool. With **Lock Aspect** selected, Aura constrains the proportions of the selection area to a fixed ratio. With **Lock Aspect** unselected, you can independently adjust the height and width of your selection area. To crop your selection and create a new project window, hit the ENTER key or the **Crop** button on the Crop tool panel. Once you crop out an area, Aura creates a new window that uses the original filename preceded by "crop-."



Selecting the crop area with the Crop tool and the Tool settings panel

THE ZOOM TOOL

The Zoom tool lets you zoom into or out of areas of your project, from a range of 1 percent up to 10,000 percent. With the Zoom tool selected, you zoom in, or magnify, an area, by clicking with your LMB. To zoom out of an area, click with your RMB. When you use this tool, you zoom in or out of the area in the image that is beneath the magnifying glass.



The Zoom button on the Main panel



HINT While any tool is selected, you can use the > key to zoom in and the < key to zoom out of your images. You can also zoom in and out graphically if you hold the ALT key and drag with your RMB.

Notes:

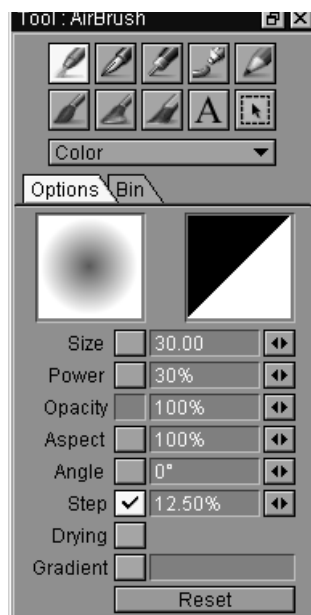


Chapter 4: Drawing Tools

Aura provides several drawing tools for your use. These tools work in conjunction with the drawing functions (freehand, straight line, rectangle, ellipse, etc.) discussed in the previous chapter.

THE TOOL PANEL

When you choose a drawing function, the Tool panel displays the tools, the brush shape and related options.



Example of the Tool panel using the Airbrush

The Tool panel should be visible by default; however, if it isn't, click the Tool panel button on the menu panel.



The Tool panel button on the menu panel

The ten buttons at the top of the Tool panel activate drawing tools. The settings on the Options tab change based on the active tool. Beneath the ten buttons is the drawing mode pop-up, discussed in Chapter 6.



NOTE The Tool panel will change its appearance based on the active function.

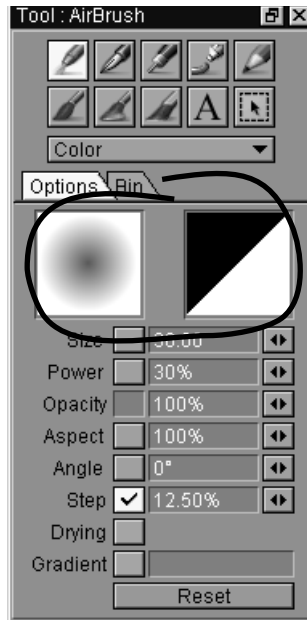
COMMON SETTINGS

Many of the tools offer settings that are common to multiple drawing tools, like power and size.

Brush Shape

When available, the brush shape controls appear at the top of the Options tab.

The left window gives you a preview of the brush. The right window gives you a profile preview of the brush. This is essentially a cross-section of one-half of the brush. On the next page are some examples



Brush shapes for the Airbrush

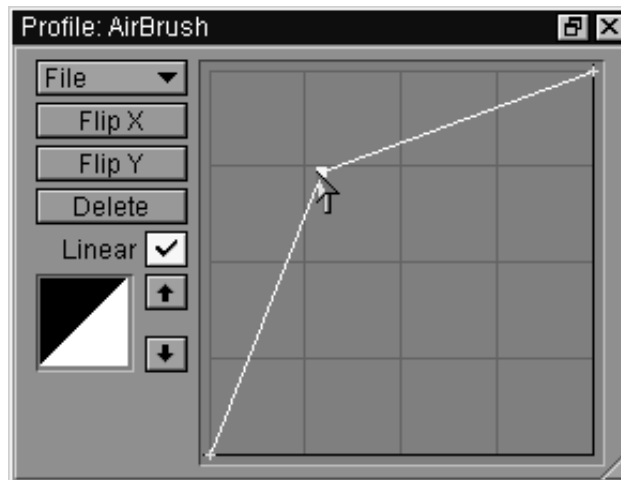
with the cross-section superimposed over the brush preview to show you the relationship.



Examples of available Brush shapes

Double-clicking the profile preview window brings up the brush profile editing panel.

To add a point to the profile curve, click and drag your LMB in the graph area. When the point is in the desired position, release your mouse button.



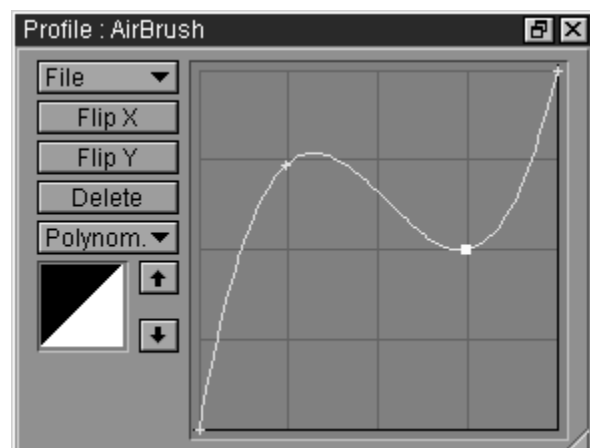
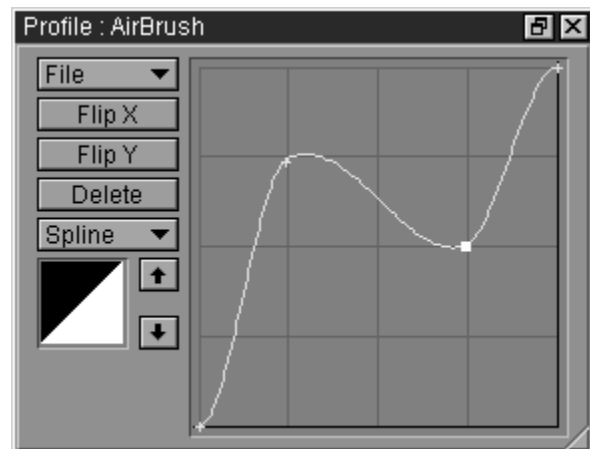
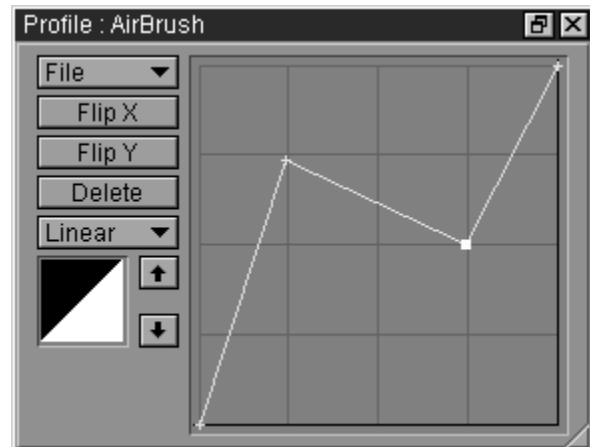
Adding a point in the Profile curve

To move an existing point, click on the point with your LMB to select it and then drag it. (Note that you can drag only the two default points along their respective edges.) You can flip the entire curve horizontally or vertically by clicking **Flip X** or **Flip Y** button.

To delete a point, select it by clicking on it and then click the **Delete** button.

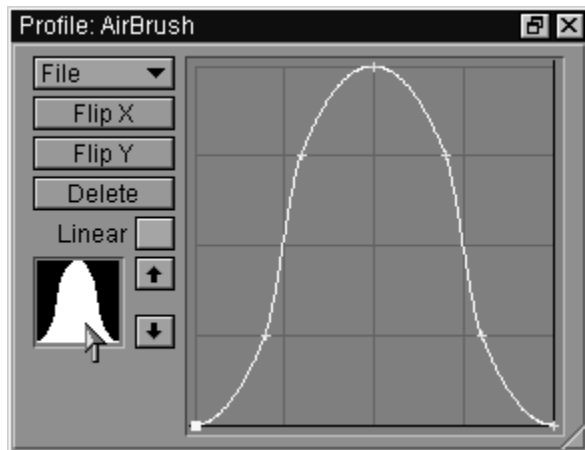
You can save and load files for the profile curves from the **Files** pop-up menu. You also have a reset option on this menu.

The Profile Editor offers three options for editing your curve: Linear, Spline and Polynomial. When you activate the **Linear** option, the curve changes direction abruptly from point to point. With **Spline**, the curve travels smoothly through the points. If you choose **Polynomial**, you produce a rounded curve based on an algebraic calculation.



Top: Linear. Center: Spline. Bottom: Polynomial.

Use the up and down arrow buttons on the preset selector to cycle through built-in profile curves, which you can use as is or alter it. Click the preview window to use the selected preset.



The preview window and arrow buttons for Built-in profile curves



NOTE When your mouse pointer is directly over a point, you can use the right-click pop-up menu as a shortcut to some of this panel's features.

Common Parameters

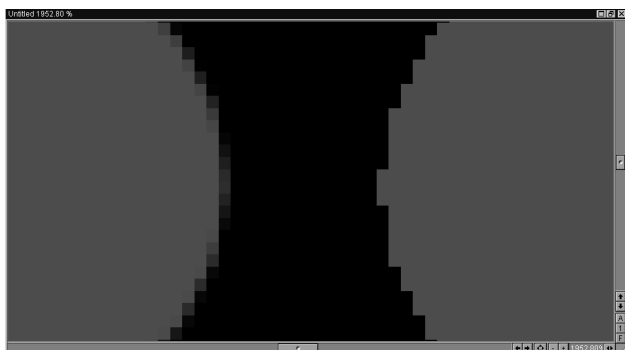
Many of the tools share the same parameters. The following list describes the available parameters:

Angle - Angle rotates your brush. Use in conjunction with **Aspect** values of less than 100%



Angle = 35% (Aspect = 30%)

AAliasing - Antialiasing smooths the edges of the paint and therefore eliminates stairstep or jaggies that can appear on the edges of objects. Antialiasing is



Left: Antialiased edge; Right: Non-Antialiased edge

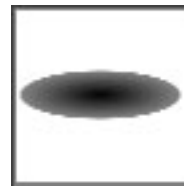
accomplished by diminishing the opacity (transparency) of pixels along object outlines. As the pixels become more and more transparent, the colors covered by these pixels become more and more visible. Generally, you want this function active.

Aura features *subpixel antialiasing*. As such, antialiasing is actually based on the position of your pointer within a pixel!



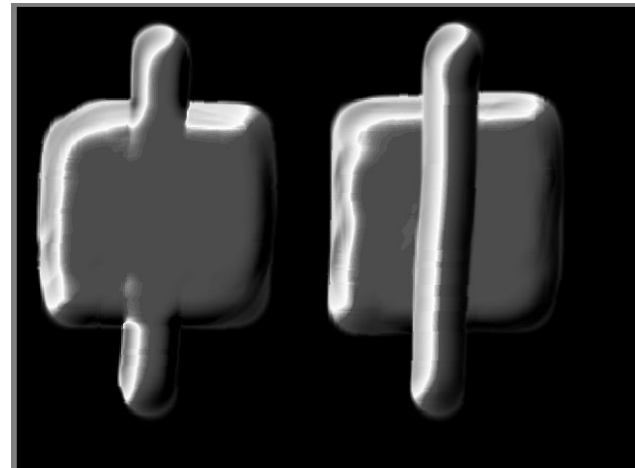
Subpixel antialiasing

Aspect - Aspect stretches or squashes the brush.



Aspect = 30%

Drying - Drying controls the behavior of the paint when you pass over an existing line made with the tool in a previous brush stroke. If activated, the paint will dry between strokes. Therefore the new line will cover the old line. If deactivated, the new and old lines will mix together, which may modify the borders of the old line.



Left: No drying. Right: Drying active

Note, the paint will never dry during the same brush stroke (i.e., while you continue to hold your mouse button down). However, it dries automatically when you change the current color, the gradient, the frame, the spare, the paper, the project, the mode, the stencil, the channel preserve and the undo.

Opacity - Opacity globally controls the transparency of the line drawn. Lower values result in a transparent, less opaque, brush stroke.

Power - Power is the maximum intensity of the stroke in percent. It works with **Opacity** to control the density of the ink applied.

Reset - Click this button to return parameters to their default values.

Size - Size is the radius of the brush in pixels. If you have a scrollwheel mouse, you can adjust **Size** with it.



HINT As the **Size** increases, screen updates may occur more slowly. Above a certain size – which will vary depending on the power of your system – you should choose the Dotted Freehand Line function for freehand tasks.

Step - Step indicates the number of pixels between each application of the brush as you draw. If not active, the step is automatically computed based on the brush size.



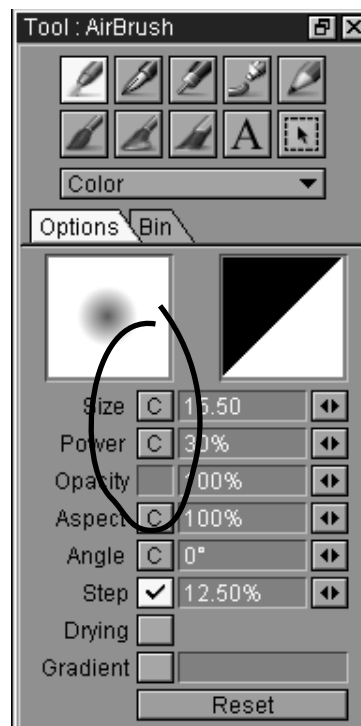
NOTE Not all parameters are available with all tools.

Gradients

See the next chapter for information on gradients.

Connection Buttons

Many of the tool parameters have a green connection button to the left of the numeric input field.



Connection buttons on the Airbrush tool

Clicking on the connection button displays a pop-up menu. You can select from various input characteristics that will vary the parameter dynamically.

Speed - Speed changes based on the velocity at which you move your cursor.

Direction - Direction uses a different value based on the direction you are drawing.



Size and Direction at 15

Orientation - Orientation is similar to **Direction**, but lines get thinner at two opposing points. Use this parameter to mimic the effect of a calligraphy pen.



Size and Orientation at 15

Fade - Fade will fade out your parameter over distance.

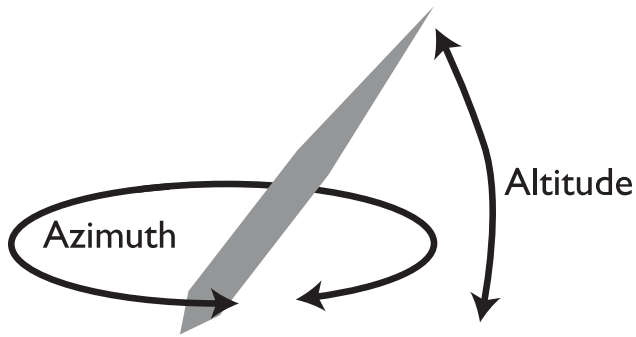
Random - Random adjusts the selected parameter randomly.

Tablet-related Items

Pressure - Pressure connects pressure on a tablet to the tool parameter. When you use minimum pressure, the intensity of your line is near zero. As you press harder, the intensity becomes closer to the **Power** setting and becomes equal to it when you reach maximum pressure.

Altitude - The Altitude changes depending on the vertical angle of the stylus, if supported by your tablet.

Azimuth - The Azimuth changes depending on the rotational heading of the stylus, if supported by your tablet.



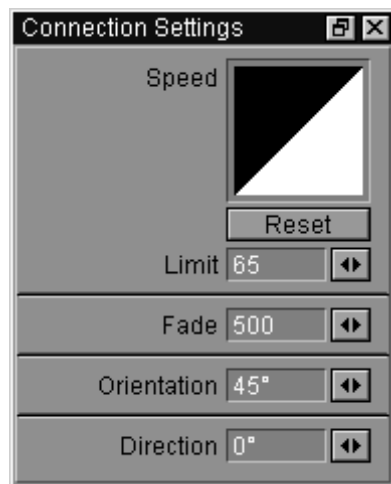
Finger Wheel - The Finger Wheel lets you adjust the parameter interactively with the FingerWheel if that option is available on your mouse or stylus.



NOTE The parameter's (e.g., **Size**, **Rotate**, etc.) normal value on the Tool panel is usually used as a base value for changes made by the connection settings.

The **Reset** button returns all connection to none and all values to their defaults.

The **Options** menu item brings up the Connection Settings panel. Here you can set options for some of the above input parameters.



The Connection Settings panel

Speed uses a sensitivity curve. By default, the curve is a straight diagonal line. Therefore, any action on the line (increasing the pen size, pencil opacity, etc.) will increase in proportion to the cursor displacement speed.

You can modify these curves by dragging your pointer on them. Bowing the curve upward, for example, will increase the effect on the line proportionately more than the increase in applied speed. Conversely, if you bowed the curve downward, the effect on the line will work less quickly than the applied speed. You would need to move the mouse faster to obtain the same effect on the line.

The **Reset** button adjacent to each curve restores the curve to its default appearance (diagonal).

The speed **Limit** value sets the maximum pixels per 1/100th of a second. For example, you can connect size to speed. Then, the higher the limit you set, the faster you must move the cursor to approach the normal size setting.

The **Fade** setting determines the distance where the parameter is totally faded, in pixels. The higher the fade value, the longer it takes the brush stroke to fade.



NOTE If used with the line tool, the fade is always evenly distributed along the length of the line.

The **Orientation** angle sets the *narrow direction*. A value of 0 makes horizontal strokes narrow and 90 makes vertical strokes narrow.



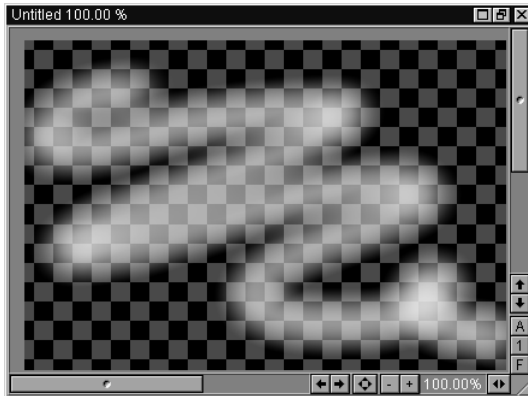
Left: Orientation at 90 degrees.

Right: Orientation at 0 degrees

The **Direction** angle sets the direction your mouse must travel to get the base setting (on the Tool panel) – essentially, the *no effect* angle.

THE AIRBRUSH TOOL

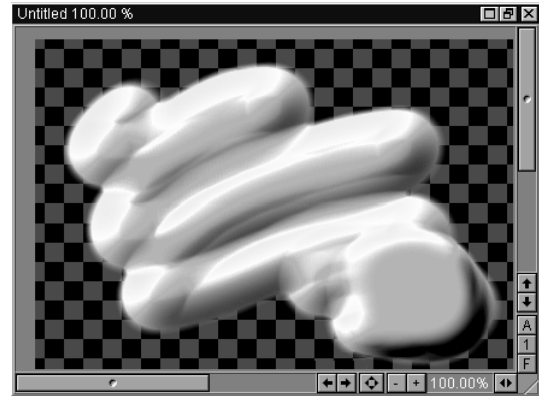
The Airbrush tool sprays paint on the screen. The more paint you spray at a specific location, the denser the color you obtain. On most tablets, you can apply the airbrush by using the Finger Wheel.



Line drawn with the Airbrush tool

THE OIL BRUSH TOOL

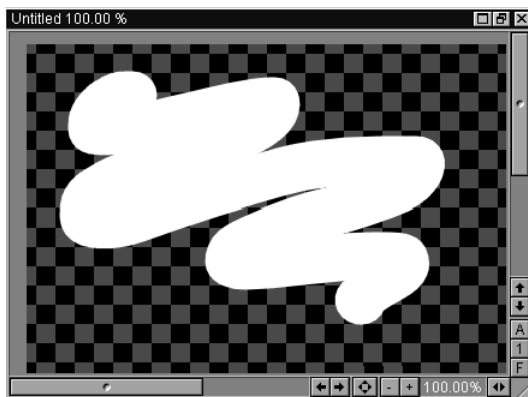
The Oil Brush tool lets you paint like you were squeezing oil paint out of a tube. The lines you draw will seem raised.



Line drawn with the Oil Brush tool

THE PEN BRUSH TOOL

The Pen brush tool draws a solid stroke.



Line drawn with the Pen Brush tool

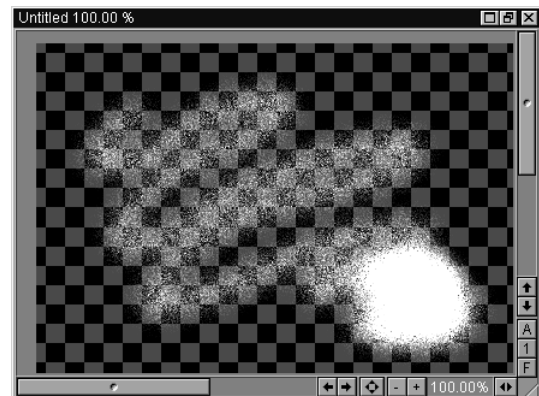
The **Grain** option defines the stiffness of the brush bristles. The available options, from softest to stiffest, are **Silk**, **Soft**, **Medium**, and **Hard**. With stiffer settings you will see more highlights in the brush strokes from the (imaginary) bristles.



Grain pop-up menu for the Oil Brush

THE CHARCOAL PENCIL TOOL

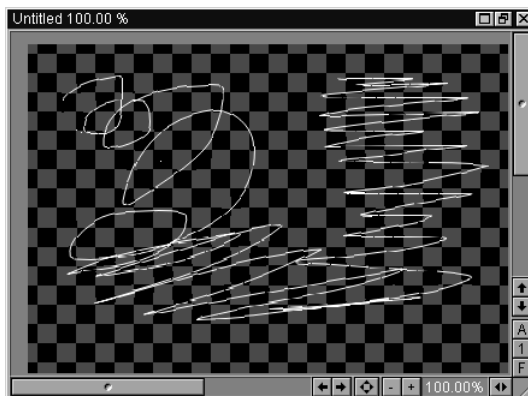
The Charcoal Pencil tool leaves *greasy* particles under the pointer. Larger **Size** settings create a chalk-like effect.



Line drawn with the Charcoal Pencil tool

MECHANICAL PENCIL TOOL

The Mechanical Pencil tool draws one-pixel lines.



Line drawn with the Mechanical Pencil tool

THE WET BRUSH TOOL

The Wet Brush tool draws with a very diluted paint, like watercolor. When you paint with the Wet brush, you produce a transparent stroke.



Line drawn with the Wet Brush tool

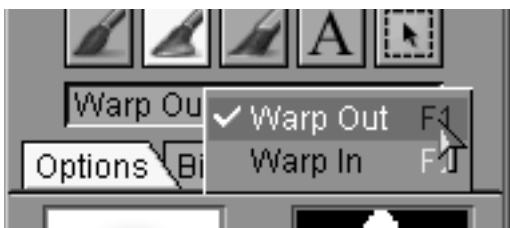
THE WARP BRUSH TOOL

The Warp Brush tool distorts the underlying pixels. Use it on pictures to make a gooey mess!



Distortions to image created with Warp Brush tool

Use the mode pop-up menu to choose the direction of the warping.



Warp pop-up menu



HINT This is great for using with the Charcoal pencil for smearing and smudging like a traditional artist.

THE SPECIAL BRUSH TOOL

The Special Brush tool smears and smudges the underlying pixels.



Smears and smudges with the Special Brush tool



Options in the Special Brush pop-up menu

Smear Mode

The **Smear** mode leaves smeared color behind the brush, as if you passed your finger over fresh paint. It can give a pencil or pastel appearance if used with a medium-sized brush and the FreeHandLine function. Furthermore, parallel brush strokes in a certain direction can create an effect similar to brush strokes on a canvas or photographic motion blur.



Smear Mode distortion of the Special Brush Tool



HINT Use the **Smear** mode with the AirBrush, to take advantage of the smoothness of this tool (powerful at the center and soft around the outlines, if you keep the default setting).

Shift Mode

With the **Shift** mode, the brush smudges everything over which it passes, as if these elements were blown away by the wind. You will get a completely different effect than with **Smear** mode, which leaves some essence of the original color. The **Shift** mode moves portions of the image while more or less maintaining their link with the rest of the image.



Distortion using Shift mode for the Special Brush tool

As with the **Smear** mode, use the AirBrush to soften the effect of the **Shift** mode. With the AirBrush, the link between the moved parts and the rest of the image remains stronger. Don't hesitate to adjust the **Opacity** of the AirBrush tool to 100% with a very high envelope so that the lightness of the effect is sensitive only on the edges of your stroke. Otherwise, shifted areas may appear blurred or transparent.

Mixer Mode

The **Mixer** mode is very similar to the **Shift** mode, except your A Color is mixed in with the colors.

The Impress Mode

The **Impress** mode uses one of the colors in the spare image to draw on the current image. It can create an effect similar to an impressionist painting (hence its name). If there is no spare image, this mode is ghosted (i.e., unavailable) on the pop-up menu.

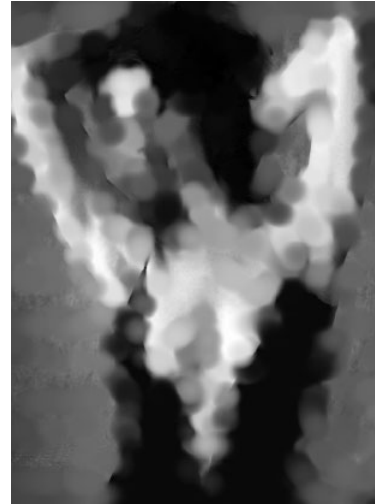
Using Impress

You can use this drawing mode in two different ways.

1. In the first approach, load an image, choose **Edit > Spare > Copy to Spare** (Or press Shift+) to copy the image to the spare buffer.

2. Clear the screen. (or fill it with white, black or gray.)

3. Select **Impress** mode and draw a series of very short strokes or small dots adjacent to each other with a round brush. The contents of the spare image appear gradually in an impressionist style.

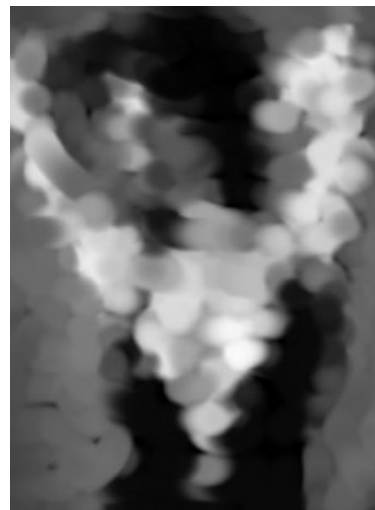


Impress for the Special Brush used with a clear work area and a Spare image



HINT You usually get the best results if your paint **spots** are small).

In the second approach to using **Impress**, you use the same image for the current image and the spare image (rather than clearing or filling the screen). The effect looks something like what you obtain with the



Impress for the Special Brush used with image on work and a Spare image

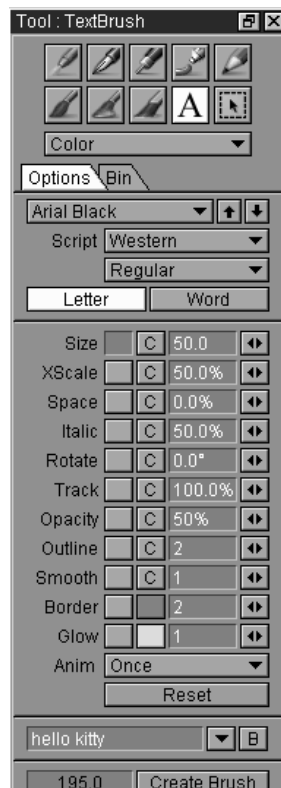
Smear mode, but whereas **Smear** mode degrades the image until it eventually becomes completely blurred, **Impress** mode enables you to retain as much precision as you want by adjusting the size of the brush.

THE TEXTBRUSH TOOL

The TextBrush tool lets you create a brush using one line of text and any TrueType® font in your Windows font directory. You can set the text size and give it special attributes like rotation, outlines, glows, borders, and so on. Once you set your options, you can paint with your text, one letter at a time, you can apply the entire string as its own brush or you can create a custom brush of the string. When you create a custom brush, you can access all of the options available to custom brushes, which are discussed later.

You can learn methods for creating text effects from the tutorial in the Aura content directory, Lesson Three.

You enter your text in the input field near the bottom of the TextBrush panel. You can enter as much text as you like, however, Aura creates only one line for your brush. Notice the arrow button beside the text input field. You can click on this arrow to access a history of the text strings you've entered. Aura saves this history with your configuration when you elect to save that on exiting the program.



Tool panel for the Text brush

Text Options

Select the desired font using the pop-up menu at the top of the panel. If you have a lot of fonts on your system, a font selection window appears instead of a pop-up menu. Use the vertical slider to search for the name of the required font in the list. Select it by double-clicking it, or single-click and then click **OK**. You can cycle through your available fonts by clicking the up or down arrow buttons. Aura previews the text in the project window with all its attributes. Bring the mouse into the project window and the text attaches to the cursor.

The **Script** pop-up menu is used with foreign character sets.

The **Size** value represents the character size in pixels and cannot be less than 4.



Plain Text

The **XScale** setting lets you change the character width as a percent. A value of 100 percent is normal and 50 percent would make the characters half as wide. The value can exceed 100 percent and can even be negative. Negative values will reverse the characters horizontally.



XScale= -50%

The **Space** setting is similar to **Track** (discussed below) except that it is absolute and not relative to a character's width. A value of 0 applies normal spacing. If you activate both options, Aura averages together their effects.



Space= 25%

The **Italic** setting applies a slant to your characters. Positive values slant to the right and negative to the left.



Italic= 99%

The **Rotate** setting rotates the text by the given angle in degrees. The rotation occurs around the center of the text line. Positive values will rotate the text counter-clockwise and negative values clockwise.



Rotate= 25%

The **Track** setting modifies spacing between characters relative to the character size. A value of 100 percent gives normal spacing and 0 places the characters on top of each other. Negative values reverse the order of characters.



Track= 85%

The **Opacity** setting sets the amount of transparency to apply to the text. A low value makes text barely visible and 100 gives totally opaque text.



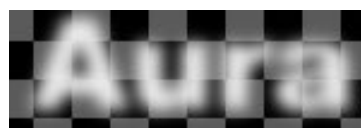
Opacity= 50%

The **Outline** setting creates an outline of the text with a completely transparent interior. The value defines the width of the outline in pixels.



Outline= 2

The **Smooth** setting antialiases the edges of characters. The value indicates the power of the smoothing applied. High settings make the text blurry.



Smooth= 10

The **Border** setting draws a border of 1 to 16 pixels around characters using the color to the right of its button. Essentially, it is a filled version of **Outline** that retains the A color for the text interior. The value defines the border thickness in pixels. You can change the border color by clicking the color-selection button. **Border** and **Outline** are mutually exclusive.



Border= 5

The **Glow** setting creates a glow from 1 to 48 pixels around the characters. The value defines the glow thickness in pixels. You can change the glow color by clicking the color-selection button.

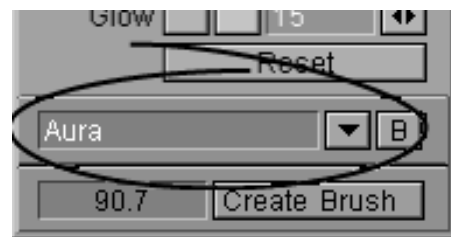


Glow= 15

To activate a text parameter, click on its button. The button then becomes highlighted. You also can activate a parameter by changing its value, either by entering a new value or using its mini-slider. Aura applies only active parameters to the text brush you create. To deactivate a parameter, simply click on its highlighted button. If you edit an input field and then press the Enter key, your cursor will automatically jump to the next input field. Click the **Reset** button to reset all parameters to their default values.

The Text Input Field

Using the text input field at the bottom of the panel, you can enter a single line of text for your text brush. All standard editing operations specific to Aura text fields apply to this text line. When the cursor is in the text field, you can automatically create the brush using the current settings by pressing the Enter key. The **B** button, beside the input field launches a panel that you can resize to enter a longer string of text; Aura still allows you to enter only a single line.



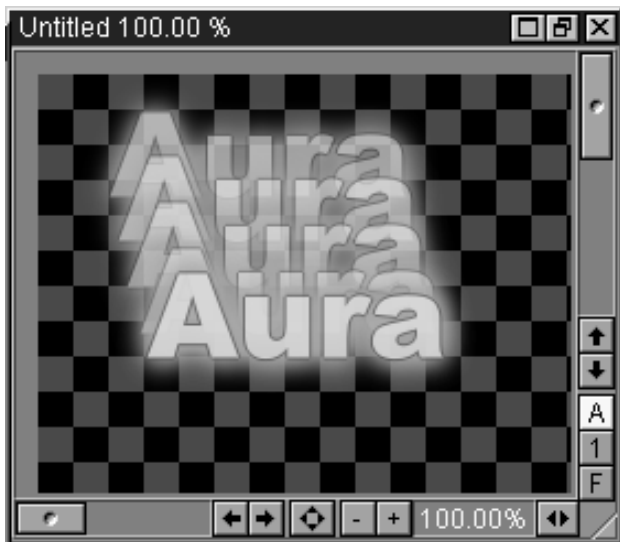
Text input field on the Tool panel

Using Your Text

When you select **Letter** and drag your mouse, Aura adds the text one character at a time using your active drawing function. When you select **Word**, Aura attaches the entire string of text to your mouse pointer like a brush. When you drag your mouse, Aura paints with the entire string.



Text brush using Letter



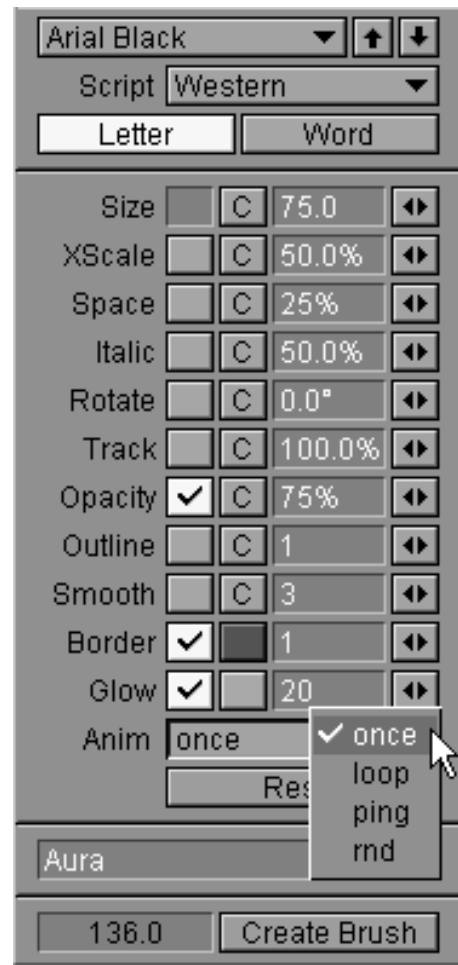
Text brush using Word

If you apply your text by **Letter**, you can select animation options from the Anim pop-up menu near the bottom of the Text tool panel. Choose **Once** and Aura applies your string of text once while you hold down the LMB. Choose **Loop** and Aura continuously applies your text until you release the LMB. When you choose **Ping**, Aura continuously applies your text, and when it reaches the end of the string it applies the text from the reverse direction. Aura continues cycling back and forth until you release the

LMB. If you select **Rnd**, Aura applies random letters from your text until you release the LMB. For all of these options, when you release the mouse button and begin again, Aura applies the text string from the beginning (except, as you might expect, random).



HINT You can use the Stroke Recorder filter to animate the TextBrush when you apply your text with the Letter option. See Chapter 8: Filters for information on using the Stroke Recorder.



Pop-up menu of animation options for Text Brush

You can create a custom brush (discussed later) from your text settings, by clicking the Create Brush button. The text string attaches to your mouse pointer, just as it does when you select the Word option. You can adjust aspects of the Custom Text brush as you would for any other custom brush and you can apply it just as you would apply any other drawing tool.



NOTE You cannot create a Custom Brush with the Letter option; Aura automatically applies the entire string as a brush.



NOTE The numeric info to the left of the **Create Brush** button indicates the length of the brush in pixels.

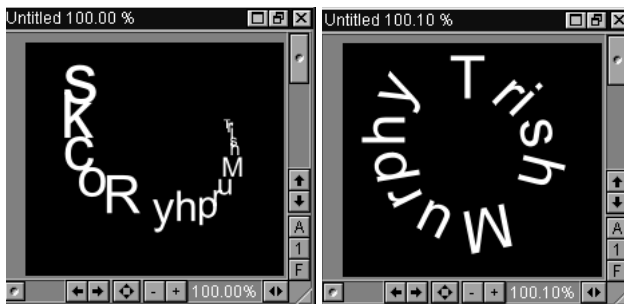


Custom brush created for text using Create Brush option

The Text Tool Connection

When you paint with text, you can apply it with any drawing tool, such as the line tool or the circle tool. You can use the connection options to produce text in a circle or on a spline, or connect Fade to size so text starts out big and gets small. Lesson Three of the tutorials will teach you how to work with text and connection; you can find the tutorials in the Aura content directory.

The following images show some examples of how you can manipulate text with the connection options:



Left: Changing the Size based on the Direction
Right: Changing Rotation based on Direction

CUSTOM BRUSHES

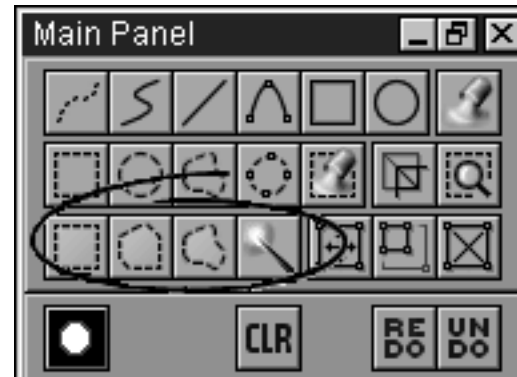
In addition to pre-defined brushes, Aura lets you cut out images and draw with them. This type of brush is called a *custom brush*. When you draw in the Color mode, Aura applies all custom brush colors in the image. The custom brush may either contain a

still image, or it may be built up from a sequence of images cut out from an animation. In the latter case, the brush is called an *animbrush*.

Cutting out a Custom Brush

Aura offers a number of CutBrush functions on the Main panel that you can use to create a custom brush. From left to right, the four buttons are Rectangle, Polygon, Freehand and Magic Wand.

NOTE Use the *b* key to toggle through the different

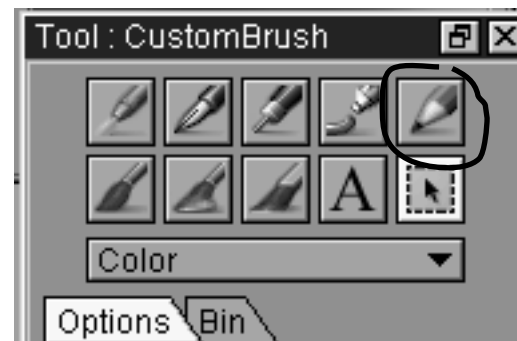


CutBrush buttons on the Main panel



custom brushes.

Aura always takes the brush cutout from



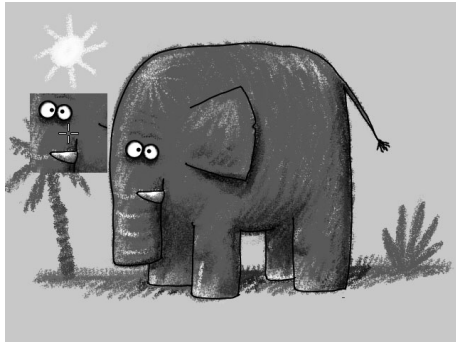
Custom Brush tool on the Tool panel

the current image in the current layer. [The Custom brush tool (Tool panel) is automatically selected after this operation.]



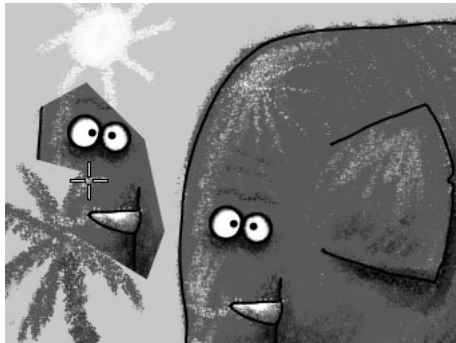
NOTE If you select another drawing tool or choose a built-in brush after cutting out a custom brush, the new tool's brush replaces the custom brush. However, the custom brush will reappear when you select the Custom brush tool.

The Rectangle CutBrush function cuts out everything located within the rectangle that you define by dragging with your mouse. You can constrain the area to a square by holding the Ctrl key while you draw. This works just like drawing rectangles.



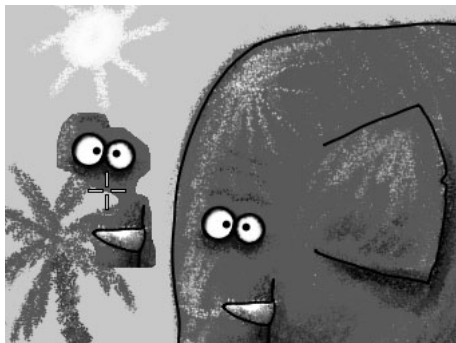
Making a Rectangle CutBrush

The Polygon CutBrush function cuts out everything located within the polygon that you define. It works just like the Polygon Filled function (Main panel). You define the starting point with the first click in the working area. An elastic line then follows the movements of your pointer. Each successive mouse click defines another vertex and a new elastic line begins from that point. To complete the polygon, click the RMB or press the Enter key. Aura draws a straight line between the first and last vertex of the polygon.



Making a Polygon CutBrush

The Freehand CutBrush function cuts out everything located within the freeform shape you define by dragging your mouse. It works just like the Freehand Filled function (Main panel). When you release the mouse button, Aura connects the first and last points of the line by a straight line.



Making a Freehand CutBrush

The Magic Wand CutBrush function is yet another way to cut out a brush. To use this function, select

the icon and then click in the area to be filled. This works just like the Flood Fill function (Main panel). The fill area spreads pixel by pixel (horizontally and vertically) to the bordering edges of the area. The border is determined on a pixel-by-pixel basis.

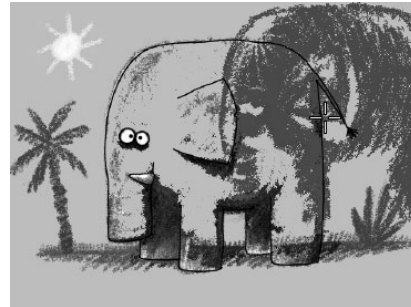
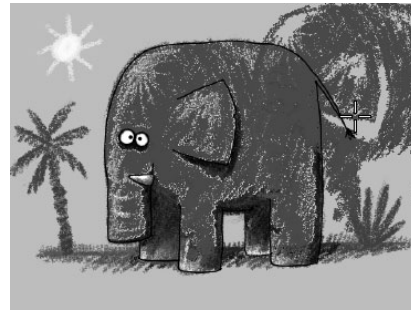
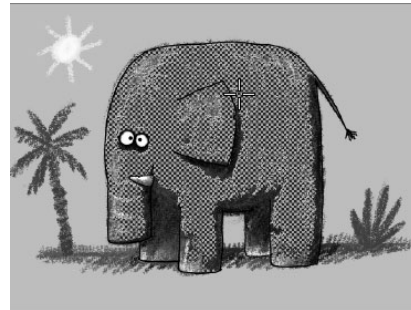
You change the selected cutout area dynamically by dragging your mouse pointer around the image. When you are satisfied with the selection area, simply release the mouse button.



NOTE This function shares the same fill settings as the Flood Fill function. Right-click the button to open the Shape Settings panel.

Copying and Cutting the Brush

Generally, if you use the LMB to make the cutout, Aura simply copies the selected image to form the custom brush. However, if you use the RMB, Aura cuts out the selected area and the area in the image becomes transparent.



Top: Magic Wand selection

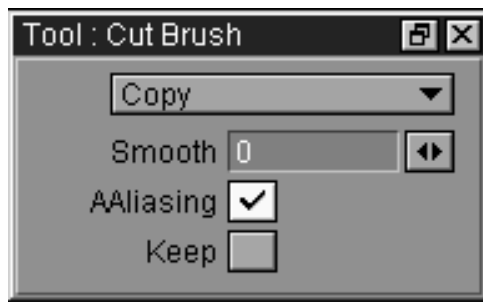
Center: Magic Wand with LMB keeps the image.

Bottom: Magic Wand with RMB cuts the image.

When you have a CutBrush function active, the Tool panel will display some options. Here you can change the LMB operation and make it cut out the area. The **Smooth** setting will blur the edges of your cutout based on the number of pixels you enter. A larger number gives you more blurring.

AAliasing applies default smoothing to the edges of your cutout selection and eliminates stairstep; for AAliasing, you do not need to enter a Smooth value, the default smooth action occurs automatically. When AAliasing is not enabled (and you do not use Smooth), the outline of your cutout selection will not be smoothed.

Keep will keep your current CustomBrush settings. If you disable Keep, the cutbrush settings are stored as a new CustomBrush, when you enable Keep, your settings replaces the current CustomBrush.



Settings for the CutBrush on the Tool panel

Animbrushes

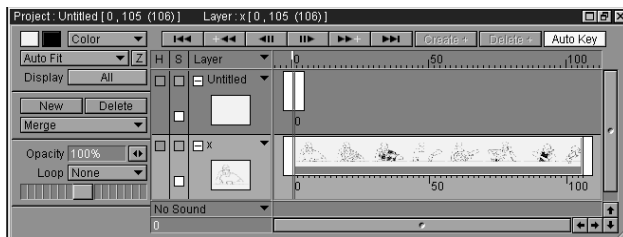
In addition to static custom brushes, you can also use a series of images, creating an animated brush or *animbrush*. These animbrushes are used in the same way as any other brush.

To create an animbrush:

1. Start Aura with the standard configuration. To create an animbrush, you need to cut it out from an animated layer; we'll use one from the Aura content directory. (For more information on animated layers, see the chapter on Layers.)

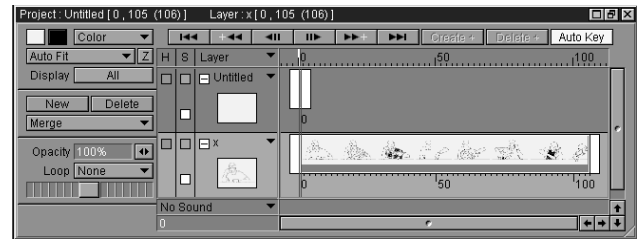
2. From the File menu, choose **Import > Sequence**, and select an anim file.

3. After you load the animation, you will see it displayed as a layer on the Layers control panel.



Animation layer created after importing sequence

4. Double-click on the layer bar to select all frames, or right-click and choose **Select All**. A solid yellow bar will appear beneath the layer bar indicating that all frames have been selected.



Select All to select animation layer

5. Select the Rectangle CutBrush function and drag out a rectangle over the project window.

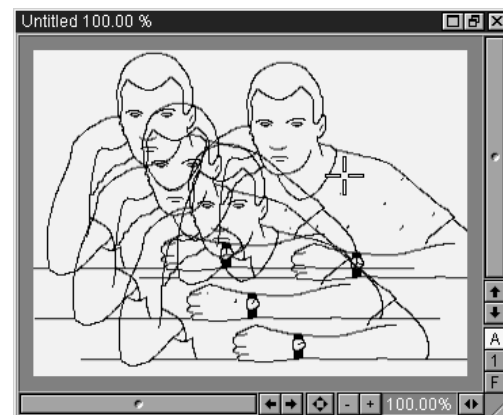


Drag out rectangle and cut out animbrush

6. Because you have selected more than one frame, Aura asks if you want to cut out an Animbrush. Click **Yes**. If you don't blink you will see a progress gauge flash by, Aura cuts all of your selected frames and attaches them to the cursor for painting.

7. Click the CLR function button to clear the screen.

8. Slowly drag your LMB over the project window. You're drawing with video as the brush cycles through each frame of the anim you cut out.

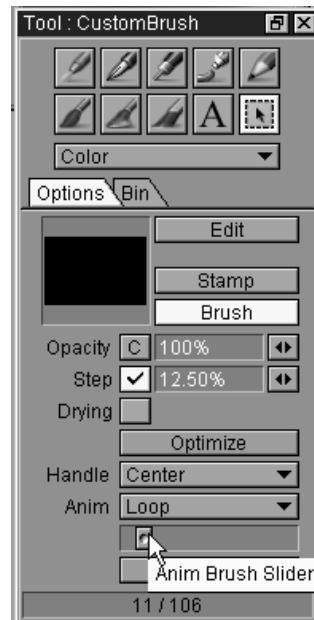


Drawing video with the animbrush

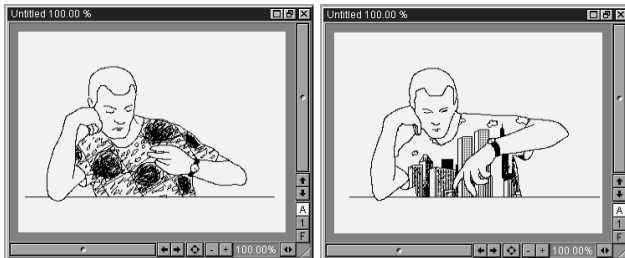
9. Clear the window again, then click your LMB and paste each image on individual frames.

Notice that at the bottom of the CustomBrush panel there is a slider that lets you scrub through the animbrush. You can see a preview in the project window. Wherever you leave the slider, is where the animbrush begins in the sequence as you paint.

Beneath the slider and the Reset button, Aura also lists the frame number and total frames for the animbrush.



Right: Using slider to scrub the animation

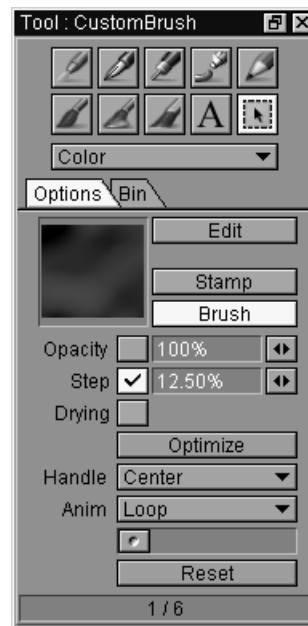


Left and Right: Example frames from animation

You can use animbrushes in all operations that use custom brushes (drawing, perspective, filters, etc.). If you drag an animbrush, your brush will cycle through each image. If you apply a function that uses a custom brush to a series of frames in an animation layer, one of the images of the animbrush will be applied in each selected frame. Animbrushes also use the same settings as normal custom brushes.

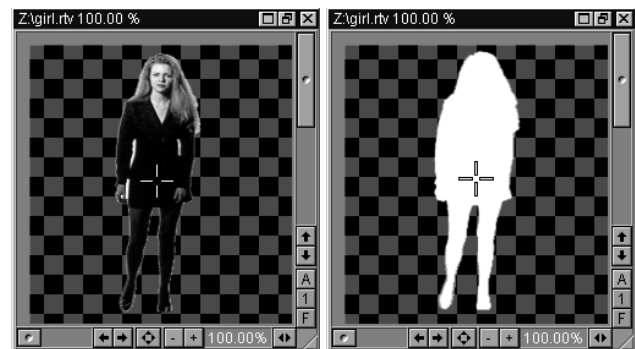
Custom Brush Options

Once you have a custom/anim brush, you can use it to draw with any drawing function. You can draw with the brush in the same way as with any other tool. Lesson Two in the Aura content directory shows various approaches to working with custom brushes.



Tool panel for Custom Brush

If the Brush mode button is activated, the brush retains its color. However, if Stamp is active, the brush's color is entirely replaced by the A color. If there is no variation in opacity in the brush, the entire brush shape will appear as a solid color with the Stamp mode. Also notice that more options appear in the drawing modes menu when you choose Stamp. The pop-up menu for drawing modes appears when you select the Color button under the various drawing tools. (For more about drawing modes, see Chapter 6.)



Left: Brush mode for the Custom Brush tool Right: Stamp mode for the Custom Brush tool

When cutting out a brush, you often will select superfluous transparent areas surrounding the part of the image you are actually interested in. These transparent areas are useless when drawing since you are essentially drawing with nothing. The **Optimize** button crops out all transparent areas around the perimeter of the brush and, therefore, reduces the memory required by the brush. (See also the discussion on the optimize function on the Edit Brush panel, discussed later.)

The **Handle** setting determines where the brush is

attached to the mouse pointer. If you choose **Custom**, crosshairs will appear on the brush. (Note: You must place your mousepointer in the project window.) Drag your LMB to position the handle wherever you wish.

If you have an animbrush, the **Anim** pop-up menu determines how the individual frames are cycled after each is pasted.

None applies only the first frame in the animbrush as you move your mouse.

Once cycles through all of the animbrush frames once when you apply the brush. After the brush applies all images, it applies nothing to the work area until you release the mouse button and apply the brush again.

Start&Once cycles through all frames of the animbrush once, then the repeats the final frame. When you apply the brush again, you apply only that final frame of the animbrush. You can return to the beginning of the animbrush by using the slider beneath Anim menu, (discussed below).

Loop cycles continuously through the animbrush until you release the LMB.

Ping-Pong cycles through the animbrush until it reaches the end and then it cycles back to the beginning. The brush continues to ping-pong through the animbrush frames until you release the LMB.

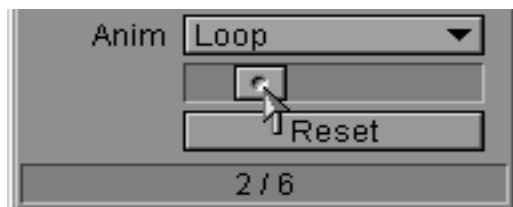
Random cycles randomly through the various frames of the animation.

Pressure uses the amount of pressure applied by your stylus, if you use a tablet, to determine how to apply the animbrush. With a low amount of pressure you apply only the first frame; as you increase pressure you cycle through the animation.

Speed is similar to Pressure. If you move your mouse slowly, you apply only the first frame and as you increase speed you begin to cycle through the animation.

Direction uses the direction of your mouse pointer or stylus to determine which frames the brush applies. If you travel in one direction then the brush applies the same frame, but when you change direction, the brush cycles to the next image.

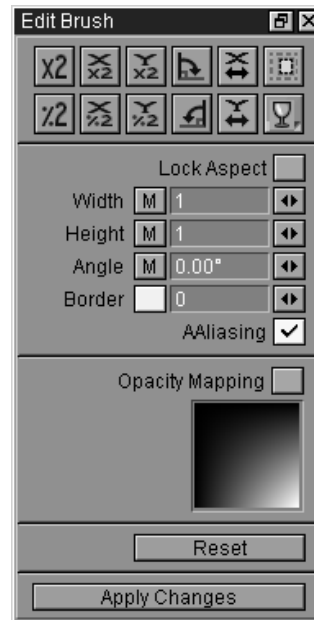
The slider beneath the **Anim** pop-up menu indicates the current animbrush frame. That is, the frame that will be pasted upon the next use. The information display at the bottom will indicate the *frame / total frames*.



The slider for current animbrush frame

Editing the Brush

Clicking the Edit button at the top of the Options tab on the Tool panel will display the Edit Brush panel. This is where you can make changes to the active custom brush.



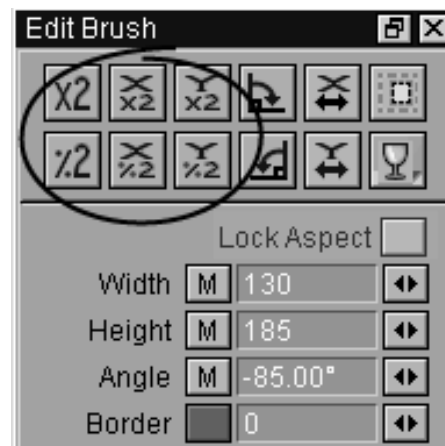
The Edit Brush panel

Applying Changes

As you change variables on the panel, Aura shows a realtime preview of your change in the project window. Any changes you make to the brush on the panel need to be applied before you can use them. This is done by clicking the **Apply Changes** button.

Resizing the Brush

At the top of the panel, the first three buttons in each row allow you to quickly change the size of the brush.



Resize buttons on the Edit Brush panel

On the top row, the **X2**, **Xx2** and **Yx2** buttons will double the size, double the vertical size and double the horizontal size, respectively. On the lower row, the **/2**, **X/2** and **Y/2** buttons will halve the size, halve the vertical size and halve the horizontal size.



Brush after %2

You also have the option of entering precise pixel values in the **Width** and **Height** fields.

To graphically alter the brush size:

1. Click the **Width** or **Height M** button. A bounding box will appear.
2. Drag your LMB to resize the bounding box. To constrain the resizing to your initial direction, hold the Shift key.
3. The resized brush will be displayed temporarily after you release the mouse button.
4. Click **Apply Changes** to apply the new settings to the brush.
5. Activate the Lock Aspect option to force the numerical and graphical changes to maintain the same aspect ratio.

You should be aware that in most cases enlarging and then reducing a brush will likely not result in a brush identical to the original. However, you can achieve some interesting effects by scaling down a brush and then scaling it back up.

Rotating the Brush

The fourth buttons from the left will rotate the brush 90 degrees clockwise (top button) or counter-



Rotation buttons on the Edit Brush panel



Custom brush after Rotation

clockwise (lower button). As with resizing, you also have the option of entering a precise rotation value in the **Angle** field.

To graphically rotate the brush:

1. Click the **Angle M** button. A bounding box will appear.
2. Drag your LMB to rotate the bounding box. You can achieve more precise adjustments by moving the mouse pointer away from the center of rotation.
3. The rotated brush will be displayed temporarily after you release the mouse button.

Flipping the Brush

The fifth buttons from the left will flip the brush horizontally (top button) or vertically (lower button).



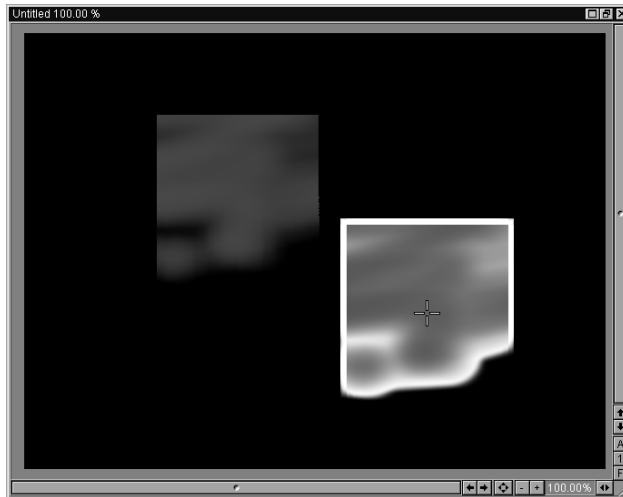
Flip buttons on the Edit Brush panel



Custom brush after Y Flip

Other Brush Editing Options

You can apply a border around the non-transparent perimeter of the brush by setting the **Border** value, in pixels, to the desired thickness.



Custom brush after applying border

The right-most button on the top is an **Optimize** function. While this option is active, it crops out all transparent areas around the perimeter of the brush. This differs from the **Optimize** function on the Tool panel in that it does not change the underlying brush data.

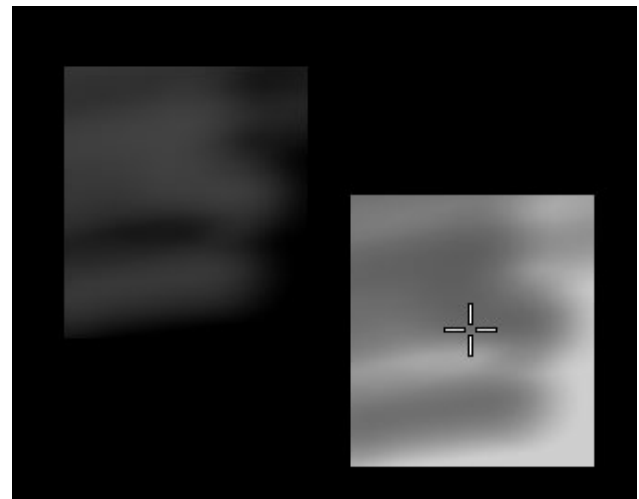


The Optimize button on the Edit Brush panel

The right-most button on the lower row takes the B color and fills in the transparent areas. Areas that are 100 percent opaque (i.e., non-transparent) will not be affected. You can toggle this option on or off.



The B-color fill button on the Edit Brush panel



Custom brush after B color added

OPACITY MAPPING

You can use opacity mapping to define degrees of transparency for different areas of the brush. When this option is not selected, (which is the default status), your brush applies the image with the image's original opacity levels.



Opacity mapping area on the Edit Brush panel

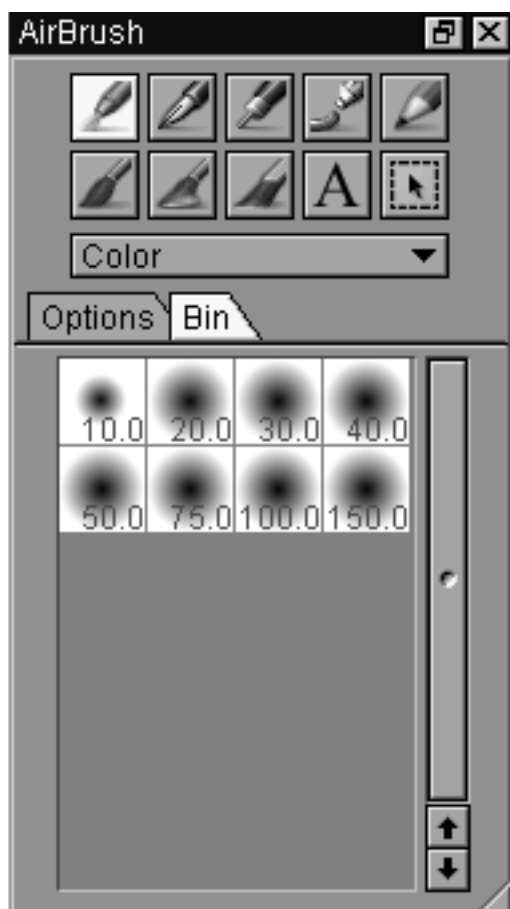
To edit the Opacity Mapping, click on its preview window in the Edit Brush panel. The Opacity Mapping panel launches; this panel offers the same options as the Opacity Mapping panel available for the Colors tools, which is discussed in depth in Chapter 5. You can apply Opacity Mapping to any custom brush whether you created it from an image or from text.



Custom Brush with text using Opacity Mapping

BRUSH BINS

All of the drawing tools (airbrush, penbrush, etc.) have a *brush bin*, accessed on the Bin tab on the



Default brushes in the brush bin

Tool panel. Each tool's bin will have some predefined default brushes you can use, but you can also save brushes you create for later use. A *brush*, in this case, is essentially the result of all of the settings on the Options tab. The number in red is the size of the brush.

To use a brush in the bin, simply left-click on it. It will become the active brush. If you right-click on the empty part of the bin, a menu will appear allowing you to add your current brush to the bin (**Put Brush**) or reset the bin to the default brushes (**Default Brush**).



NOTE When you open the menu, it selects **Put Brush** by default; you can simply click your RMB on the empty part of the bin to add the current brush to the bin.

For custom brushes, an **Import Brush** menu item appears. If you select it, a file requester will appear where you can load an image file into the bin.

If you right-click directly on a brush, you will have some additional options.

Add Brush - Adds the current brush to the bin.

Get Brush - Uses that brush. Same as clicking with LMB.

Swap Brush - Swaps the active brush with the brush in the bin.

Delete Brush - Deletes the brush in the bin.

Default Brush - Resets the bin with the default brushes. Be careful with this one, there is no way to undo!



NOTE Custom brushes, particularly animated ones, can use a lot of disk space if stored in a bin. To free disk space, delete them if they will not be used again.

For custom brushes, **Export Brush** and **Mode** menu items appear. These are shortcuts to the **File > Export > Brush** and **File > Mode** menu items.

Notes:



Chapter 5: Working With Colors

You have many ways to choose the colors with which you draw. With gradients you have the power to paint with a rainbow of colors.

THE COLOR PALETTE PANEL



The Color Palette visibility button on the Menu panel

You can use the Color Palette panel to adjust the A or B color using RGB or HSL color models. There also are several special color picking features.

There are two buttons at the top of the Color Palette panel – no matter which tab you select. The active button determines whether changes affect the

A Color (left) or B Color (right) on the Color Palette panel. (Click the desired color button to activate it.)



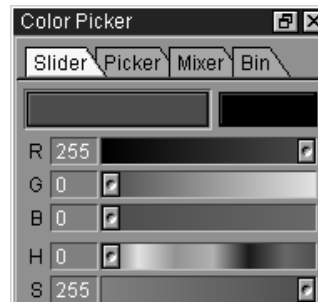
NOTE Clicking the button already selected places you in the color picking mode, discussed later.

COLOR SYSTEMS

All colors can be described using a set of basic components and there are several color systems, each with its own color theory. The systems are distinguished by the components that each uses to describe colors. On the Slider tab, you can adjust colors using the RGB and HSL color systems. Modifying the color settings in one system automatically modifies the color settings of the other.



*A color on the left and
B color on the right*



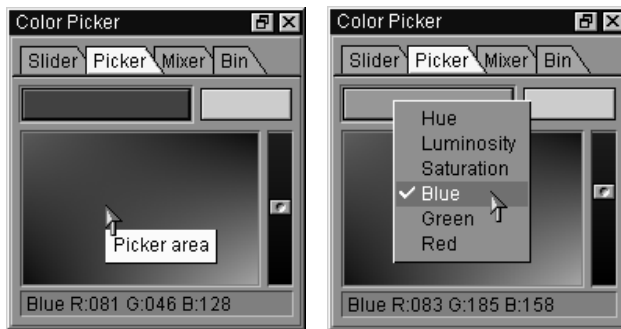
*The Slider tab showing
RGB and HSL sliders*

In RGB, color is described by red, green and blue components. The value of each component is between 0 and 255. This mode is considered *additive*, because the three components create white at their maximum values.

In HSL, color is described by hue (pure color), saturation (amount of color) and luminosity (brightness). The value for hue is between 0 and 359 (i.e., degrees) and between 0 and 255 for the other two components.

The color bands beneath the color system sliders show you the colors available at different slider positions. If you see a color you want in a slider bar, simply drag the slider over the color.

Using the Picker Tab



Left: The picker area on the Picker tab

Right: RMB pop-up menu for the picker area

On the Picker tab, you can vary a selected color parameter using the slider on the right edge. Choose the Picker *color mode* with the pop-up menu that appears when you click your RMB over the picker area.

To choose a color, drag your LMB over the pick area and then release to pick a new color. As you drag, the corresponding RGB or HSL values will appear at the bottom of the panel – click on this display to cycle between RGB and HSL.

Mixing It Up



Mixer area on the Mixer tab

On the Mixer tab, there is a mixer area where you can create your own hues, by mixing the A Color with existing colors. This allows you to act like a traditional painter and choose a color without using the sliders and without restricting yourself to the hues in the palette or an image.



Using LMB to smear colors with the A color in the Mixer area

Drawing in the window with your LMB smears all colors together, adding in the A Color as well.

If a color you want appears on the mixer window, hold your Ctrl key and drag your LMB. The corresponding RGB or HSL values will appear at the bottom of the panel – click on this display to cycle between RGB and HSL. Release your mouse button to choose a color.

If you right-click the mixer area, a special pop-up menu appears.



RMB pop-up menu for the Mixer area

The top section lists some default mixers and any user-defined mixers.



NOTE Any change you make will affect the selected (checked) mixer. Don't worry about default mixers because you can easily revert back. However, you may want to save any custom mixers.

If you select **Pick Color**, you choose the color in the pixel beneath your mouse pointer when you open the menu.

Clear Mixer clears the mixer area to the B Color.

To start a new mixer, select **New Mixer**. Aura then prompts you for a name. You can copy the currently active mixer using the **Copy Mixer** menu item. Use **Rename Mixer** to rename the currently active mixer, or **Delete Mixer** to delete it.

You can save the current mixer area as a file for later use by selecting **File > Export Mixer**. These files can be reloaded later by choosing **File > Import Mixer** and you can actually import any Aura supported image. However, the mixer window is only about 170 x 97 pixels. Images are loaded starting in the top-left corner and any excess gets cropped off.

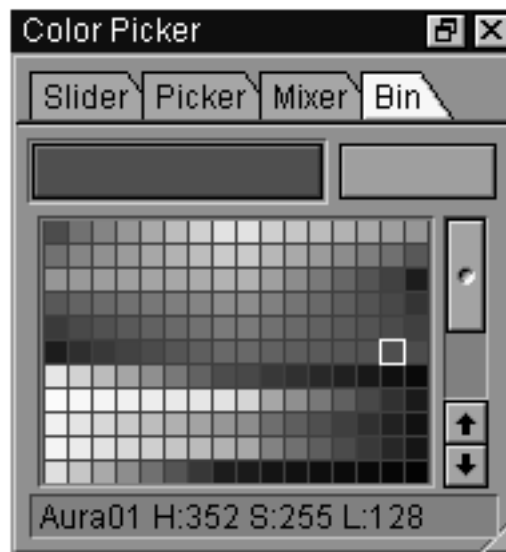


An image loaded into the mixer area

To return to the default mixers, choose **File > Default Mixers**. Note that this will delete any user-defined mixers you may have created, so you may want to save them first.

Color Palette Bin

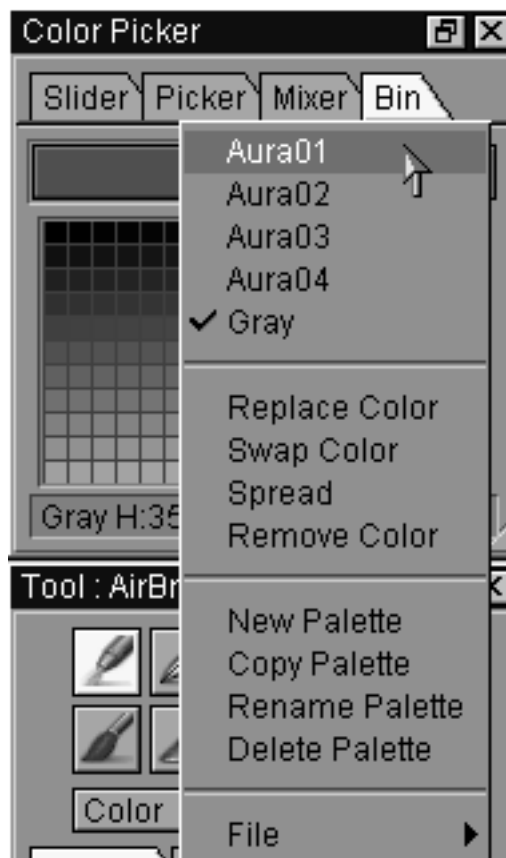
Selecting colors on the Bin tab is somewhat like choosing a color from the Picker tab, except colors are displayed in an array of color squares. To choose a color, drag your LMB over the palette area and then release to pick a new color. As you drag, the corresponding RGB or HSL values will appear at the bottom of the panel. Click on the display to toggle



Color Palette bin

between RGB and HSL.

You can add a color to the palette by scrolling down to the end and then clicking in the blank (grey) area. This will add the current A Color.



RMB pop-up menu for the bin palette area

If you right-click the palette area, a special pop-up menu appears on which the top section lists some default palettes and any user-defined palettes.



NOTE Any change you make will affect the selected (checked) palette. Don't worry about default palettes because you can easily revert back.

However, you may want to save any custom palettes.

Selecting **Replace Color** will replace the color square beneath your mouse pointer with Color A when you open the menu.

Swap Color lets you swap the colors of two palette squares.

To Swap Color, first click on a palette color – it becomes highlighted. Next, move your mouse pointer over the other color and right-click. Choose **Swap Color** and the two colors will swap positions.

Spread generates a continuous range of hues between two colors in the palette.

To Spread, first click on a palette color – it becomes highlighted. Next, move your mouse pointer over the other color and right-click. Choose **Spread** and the palette squares between these two colors will now contain a gradation of hues. (Note that both colors must already exist on the working palette.)

To remove a color from the palette, right-click over it and choose **Remove Color**.

To start a new palette, select **New Palette**. Aura prompts you for a name. You can copy the currently active palette using the **Copy Palette** menu item. Use **Rename Palette** to rename the currently active palette, or **Delete Palette** to delete it.

You can save the current palette as a file for later use by selecting **File > Save Palette**. These files can be reloaded later by choosing **File > Load Palette**. Generally, you will load a color palette file that you saved previously. However, you can actually load any file that Aura recognizes. If the file is an indexed color format, its color palette will be loaded. If the file is not color indexed, like an AVI or JPEG file, Aura computes the palette based on the image (first frame, if an animation).

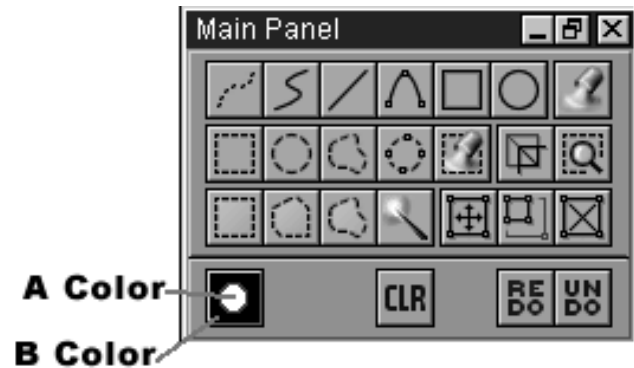
To return to the default palettes, choose **File > Default Palettes**. Note that this will delete any user-defined palettes you may have created, so you may want to save them first.

Picking the A and B Colors

As discussed in Chapter 1, Aura has two colors available at any one time, and they are displayed on the color selector button on the Main panel. The center color is the *A Color* and the surrounding color is the *B Color*. The A Color is the main drawing color. The B Color is used only when a particular function requires a second color.



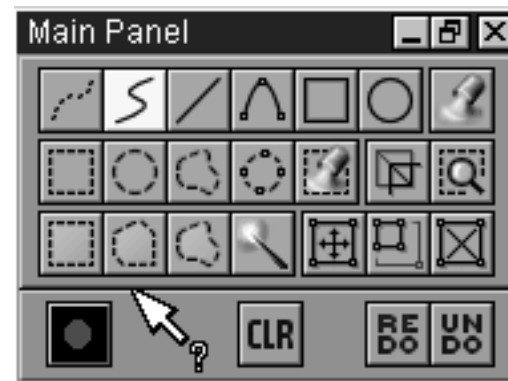
HINT Use the Color: Invert A/B command, mapped to the n key, to swap the two colors. You can change either color using the eye



dropper method, which allows you to select any color used on any pixel visible on the interface.

To choose the A or B Color:

1. Click on the A/B Color button. Your mouse pointer changes to an arrow with a question mark.



Cursor changes to question mark

2. If you want to set the A Color, drag your LMB. For the B Color, drag your RMB.

As you drag around the screen, several things happen. First, the A or B Color changes based on the color of the pixel beneath your mouse pointer. Second, if you've selected the Slider tab on the Color Picker panel, the RGB and HSL values will also reflect the values for the color of the pixel beneath your mouse pointer.

3. Release your mouse button when you find your desired color.



NOTE Simply clicking your mouse (after you have clicked the A/B Color button) will accomplish steps 2 and 3 in one motion.

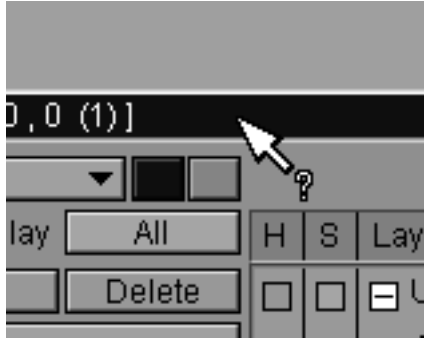
Picking Other Colors

Many panels throughout Aura allow you to select colors. These settings will have color selector buttons. These selectors work just like the A/B Color button except you will set only one color and you can use either mouse button.

HINT Make sure the desired color is visible some-



where. You may want to use the Picker, Mixer or Bin tabs on the Color Picker panel.



Two color selector buttons at the top of the Layers panel

FILLED SHAPE SETTINGS

When you select a filled drawing function, the Tool panel becomes the Filling Shape panel. Here you can set how you want the shape to be filled.



Filling shape panel

The pop-up menu at the top of the panel lets you choose the drawing modes for your shape; the drawing modes are discussed in Chapter 6.

The **Smooth** setting will smooth out the transition from the fill to the edge. Higher settings will blur the edge.

Opacity controls the transparency of the fill. Lower values will be more transparent.

AALiasing (i.e., Antialiasing) smooths the edges of the fill. This eliminates stairstep or jaggies.

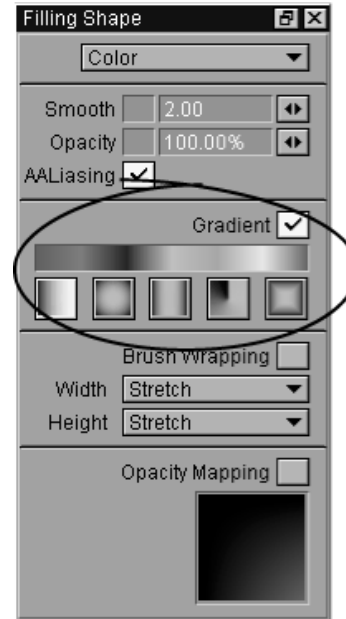
Generally, you will want this function active.

Gradients

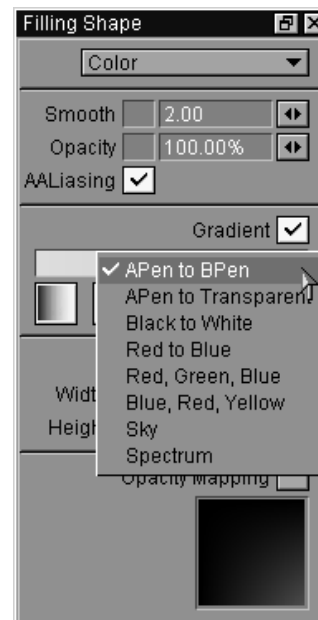
The **Gradient** option controls how paint is poured into filled shapes. It allows you to fill with several colors instead of using a single uniform color. Some of the drawing tools, like the AirBrush, give you an option to draw with *gradient ink*.



NOTE When you draw with a gradient, Aura applies the gradient based on the density of the ink used. Zero density corresponds to the left end of the gradient and 100 percent corresponds to the



Gradient area on the Filling Shape panel



LMB Gradient presets on the Filling Shape panel

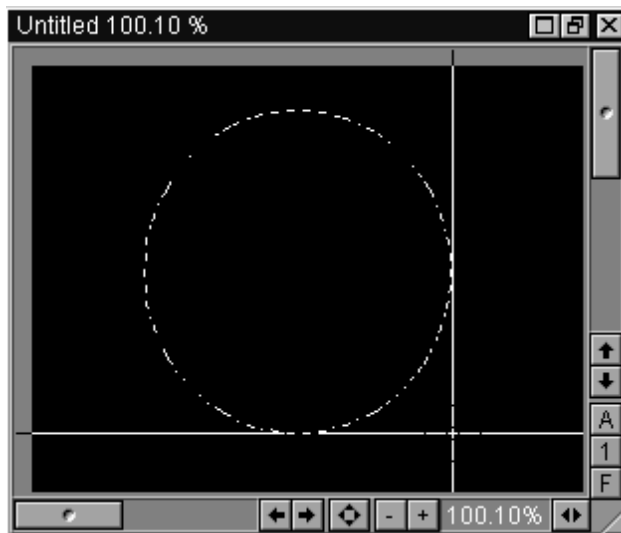
right end.

When the Gradient option is active, you can click your LMB on the gradient display and select from various presets. (Note that **APen** and **BPen** refer to the A and B Color.) You also can select any custom made gradients you create from this popup.

The Result display shows the combination of the Color and Alpha displays. You can independently adjust the Color and Alpha settings.

Filling With a Gradient

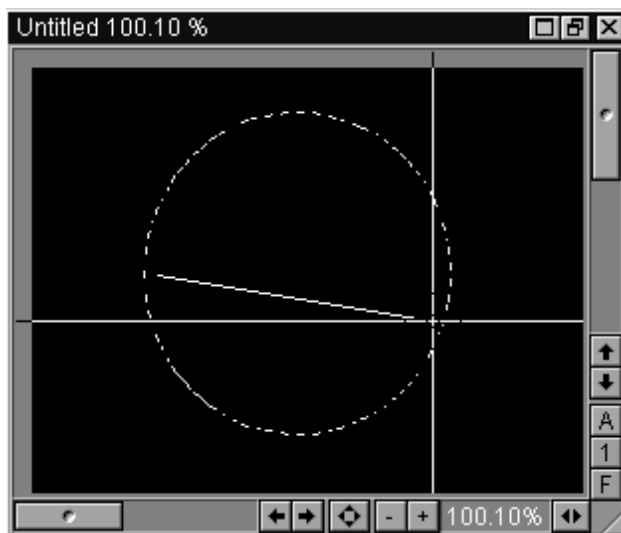
If you use a **Gradient** fill, only an outline of your



Making the fill shape outline

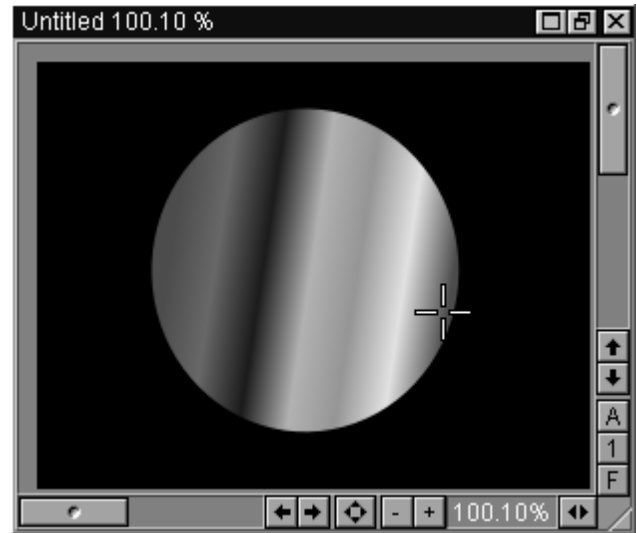
shape appears when you first use your selected filled drawing function, (see Chapter 3).

Next, you need to drag out a vector. Generally, the direction and length of the vector will affect the gradi-



Dragging out the vector

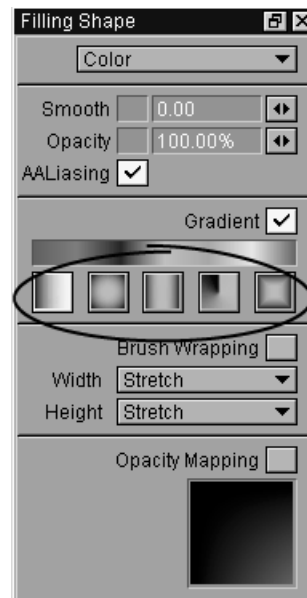
ent fill, discussed later.



Aura fills shape with gradient

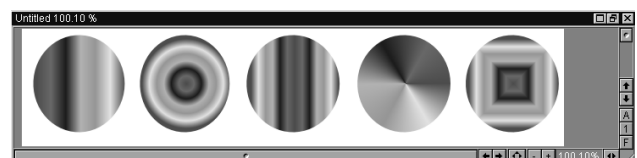
When you release your mouse button, the gradient colors will fill the shape.

Beneath the gradient bar on the Filling Shape



Gradient options buttons on the Filling Shape panel

panel are some option buttons that determine how a gradient fills a shape.



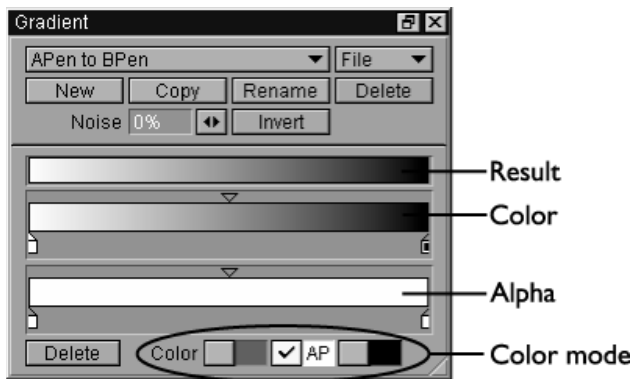
Gradient fills from Left to Right: for linear, radial, mirror, surround, and square radial

Aura offers five different types of gradient fills: lin-

ear, radial, mirror, surround, and square radial.

Global Gradient Controls

If you click on the gradient display with your RMB,



RMB gradient panel

the Gradient panel appears. Here you can edit the existing gradient, as well as create custom gradients.

The top three rows of buttons control global gradient operations. The pop-up menu at the top-left lets you select from default presets and any gradients you have created. This menu also determines the active gradient to which edits are applied.

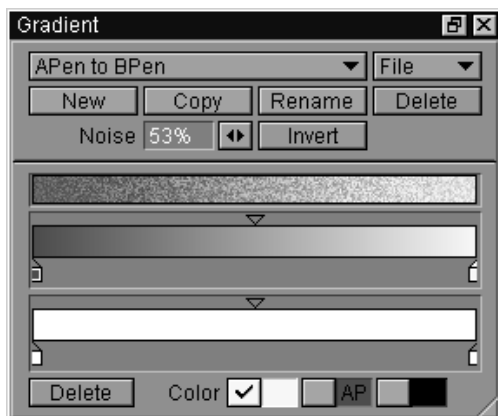
With the File pop-up menu, you can save a gradient to a file, as well as load one you previously saved. You also can choose Default Gradients to reset the available gradients to the default presets; however, be careful because resetting erases any new gradients and adjustments you've made.

To create a new gradient from scratch, click the **New** button, then enter a name. To remove the active gradient, click the **Delete** button.

You can copy the active gradient by clicking the **Copy** button. The copy (or any other existing gradient) can be renamed by clicking the **Rename** button.

You can reverse the gradient by clicking the **Invert** button.

The **Noise** value introduces a random grain in the gradient. If you click or drag your mouse pointer over



Noise at 53% in the Result display

the color display, it changes the random *seed value* and thus the random noise pattern.

Customizing the Color Component

A gradient always has at least two keys, one at the beginning and one at the end. You cannot move these keys, but you can alter them.

You can change an existing key by clicking on it. If you click with your LMB, you are merely selecting it as the active key.

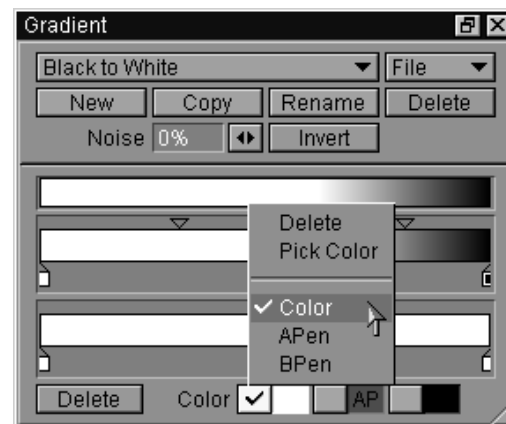
Each key independently uses one of the three Color modes indicated at the bottom of the panel. The key can use a custom color (left), the A Color (middle), or B Color (right). You can change the cus-



Color swatches at the RMB gradient panel base

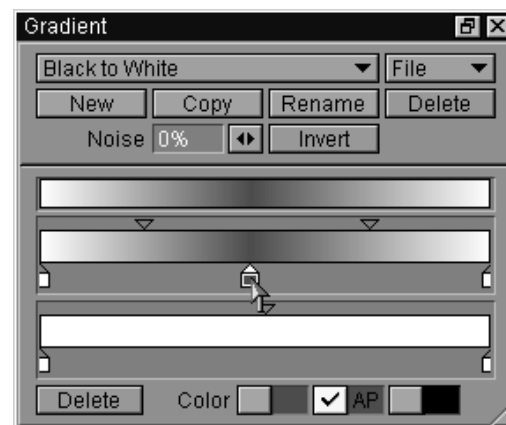
tom color by clicking on the color swatch and selecting a color as you would normally.

If you click on a key with your RMB, a pop-up menu appears that provides shortcuts to the color mode settings, to picking a color and to deleting. You



RMB pop-up for color swatches

also can delete the active key by clicking the Delete button at the bottom of the panel.



Adding and moving a key to the Color display

You can add a key by simply clicking your LMB beneath the Color display.

You can move interior keys (i.e., not the two end keys) by simply dragging. This changes the placement of where the gradient actually reaches the color.



HINT If an interior key is active, it will jump to your mousepointer position if you click your RMB, but it will not jump past any other keys.

You can also change the transition between two keys by moving the small triangle that appears between two keys above the display. By default, Aura



Top: Default transition position.

Bottom: Transition close to next key

If you place the transition point right on top of a key, you create a sharp jump to the next key.



Sharp transition created by placing arrow over key
places the triangles equidistant from each key.

You can center a transition point by clicking your RMB over it and selecting **Center** from the pop-up menu. If you move keys, the transition points also will move relative to the keys.



HINT Two identically colored neighboring keys will create a solid color between them.



NOTE You cannot delete or move the starting and ending keys.

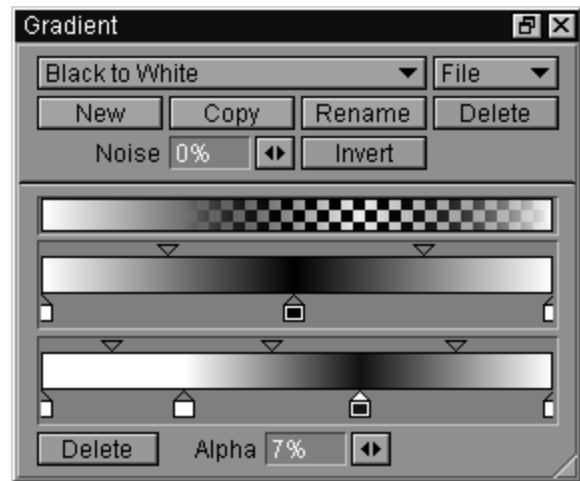
Customizing the Alpha Component

Editing the Alpha display works just like editing the Color display, discussed previously. The only difference is that instead of picking colors for each key, you set a specific alpha value.



NOTE The Alpha component affects only filled drawing functions.

You can change the alpha value for the active



The Alpha component for gradients

alpha key by setting a new value in the **Alpha** input field at the bottom of the panel. A value of 100% represents a completely opaque color, and a value of 0% creates a completely transparent color. A color becomes less visible as its alpha value decreases. Aura uses a checkerboard pattern as the background.



NOTE The available controls at the bottom of the panel are different if the active key is an alpha key or if it is a color key.

If you right-click an alpha key, the pop-up menu contains a shortcut to delete the key and set the alpha value.

Brush Wrapping

The **Brush Wrapping** option lets you fill a shape using the current brush. Aura gives several options for filling the shape horizontally (**Width**) and vertically (**Height**). The **Stretch** setting stretches or compresses the brush linearly so that it occupies the entire **Width** or **Height** of the shape to be filled. The **Tile** setting duplicates the brush to fill the shape. The **Wrap** setting distorts the brush to fill the shape.



Top: Stretch for Width and Height.

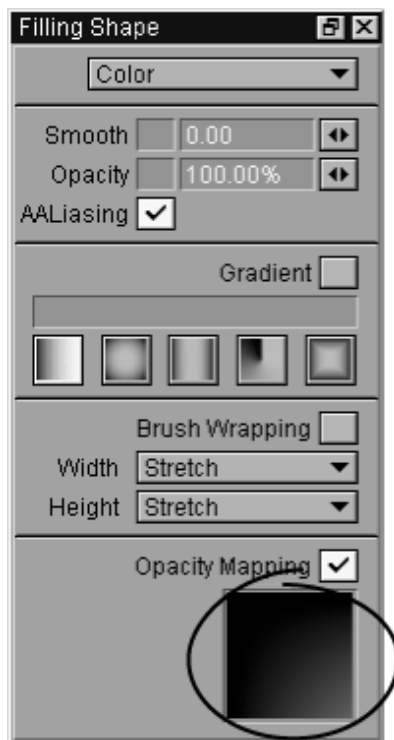
Next Page: Tile Wrap for Width and Height



You cannot use **Gradient** and **Brush Wrapping** at the same time. Any range application option is automatically deactivated when you select **Brush Wrapping**. Similarly, all brush wrapping options are automatically deactivated if you select **Gradient**.

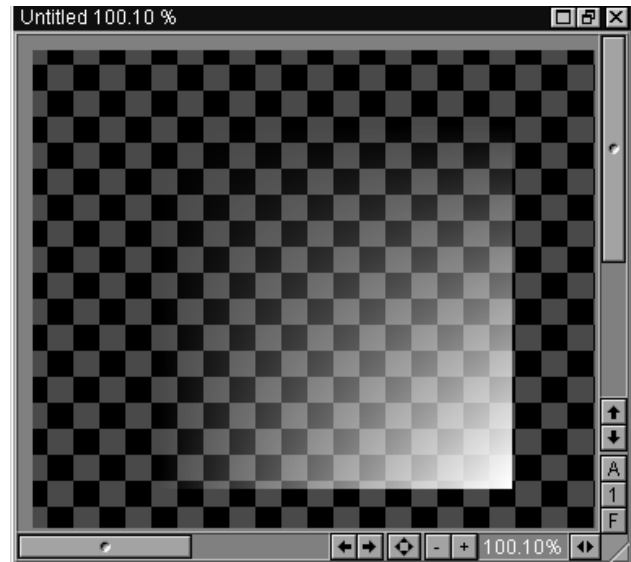
Opacity mapping

Usually when you fill a shape, you use one or more opaque colors. **Opacity Mapping** lets you vary the transparency of the color(s) used. Shapes are no longer uniformly filled with opaque color, but rather with color of varying opacity (transparency) throughout the shape. The Opacity Mapping Preview shows you what the current opacity map is. White indicates opaque areas and black indicates transparent areas.



The Opacity Mapping Preview on the Filling Shape panel

Here is a simple filled rectangle using the default opacity map settings. (Note that a checked background has been used to make the effect stand out.)

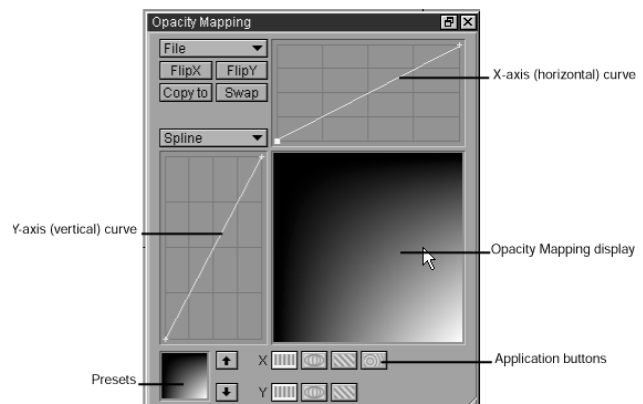


Filled rectangle with default opacity map setting

Notice how the rectangle's color is totally opaque at its bottom-right corner and totally transparent at the opposite corner.

Opacity Mapping Panel

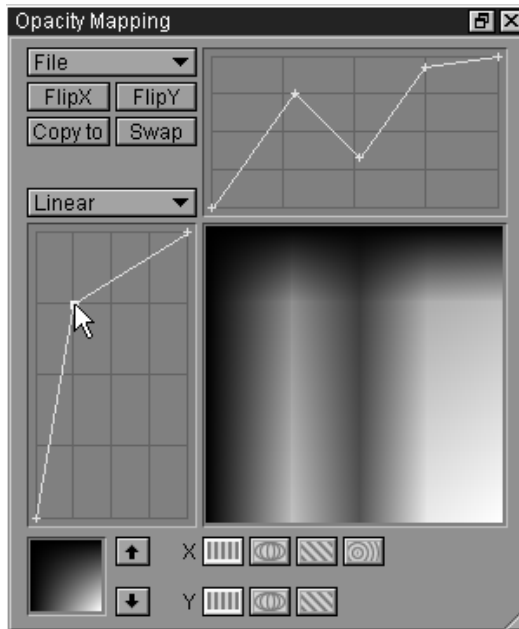
Click on the Opacity Mapping Preview to open the Opacity Mapping panel. Here you can customize the opacity map.



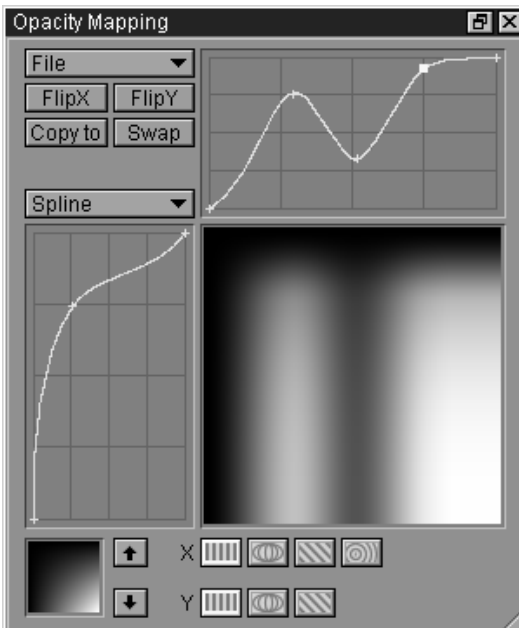
The Opacity Mapping Display shows the current opacity map. Opacity variations are defined using the X-axis and Y-axis curves. On the X-axis curve, higher points have more opacity than lower points. The default setting has 100% opacity on the right side and 0% on the left. On the Y-axis curve, points on the left have more opacity than points toward the right. The default setting has 100% opacity on the bottom and 0% on the top. The combination of both curves yields opaque areas in the bottom-right and less opaque areas in the top-left.

Editing Opacity Curves

The Opacity Mapping Display contains a representation of the opacity mapping. It continuously shows the changes made to either curve. You can drag existing points on either curve with your LMB to adjust the opacity mapping. However, the end-points can be moved only along the edges. You can add new points by clicking your LMB in the curve edit areas and dragging your mouse. Release your mouse button when the point is correctly positioned.

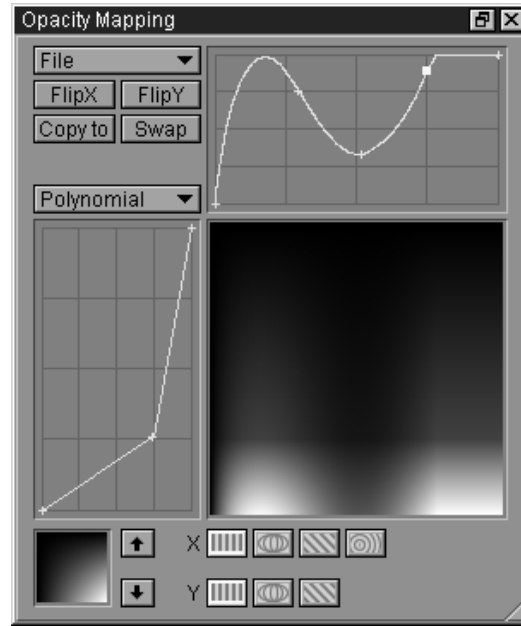


Opacity Mapping with Linear curves for X and Y axes



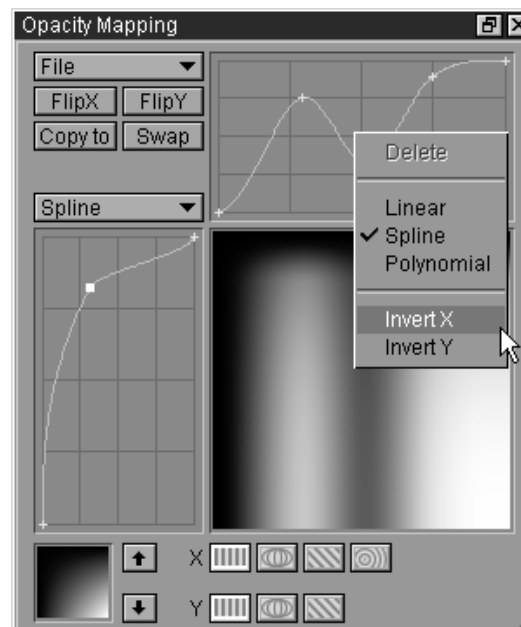
Opacity Mapping with Spline curves for X and Y axes

The pop-up menu between the curve displays lets you choose the type of curve you want to use for Opacity Mapping. When you select the **Linear** option, the curves abruptly change direction from point to point. For smoother transitions, you can select **Spline**, while **Polynomial** creates a curve based on an algebraic equation. You can set the type of curve differently for each axis. For example, you can use **Linear** for the X axis and use **Polynomial** for the Y axis.

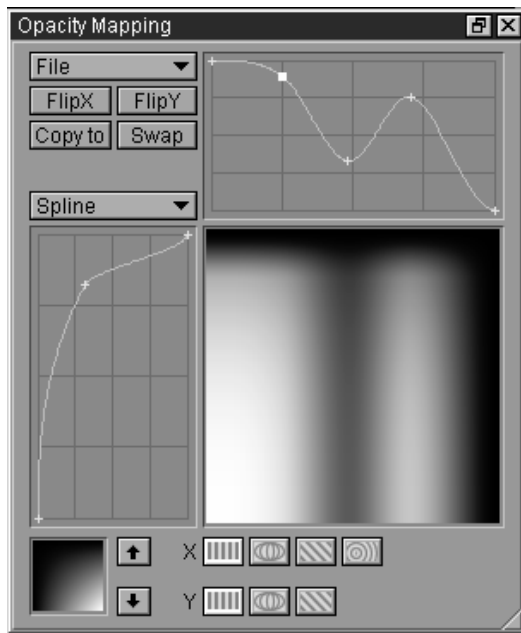


Opacity Mapping with Linear Y axis and Polynomial X axis

If you right-click in a curve edit area, a pop-up menu appears. The menu gives you a short cut to the curve types and to invert options. The **Invert X** flips the curve horizontally and the **Invert Y** flips it vertically.

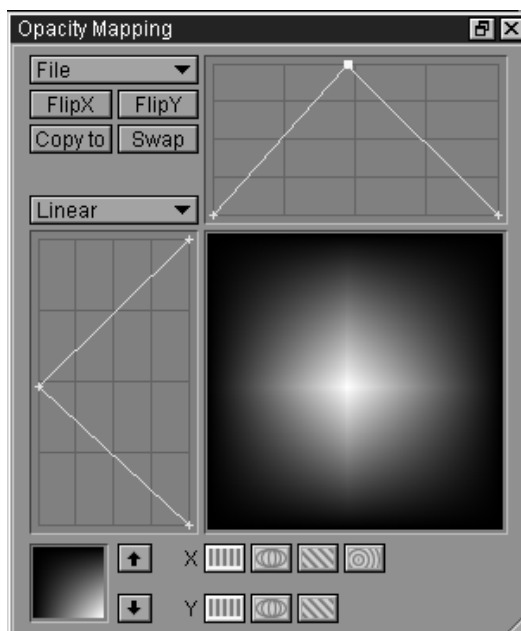


Curve edit area RMB pop-up menu



X-axis curve after Invert X

If you click your mouse button directly in the Opacity Mapping Display, you will get mountain curves for the Linear option or bell-shaped curves for the Spline option. If you continue to drag your mouse, you will move the position of the tip points, which correspond to the densest area.



Linear curves after clicking in the Opacity Mapping display area

Global Edit Functions

Using the **File** pop-up menu, you can save and load Opacity Mapping curves. You can also reset the panel to its default settings from this menu.

The **FlipX** and **FlipY** buttons will flip both curves horizontally and vertically.

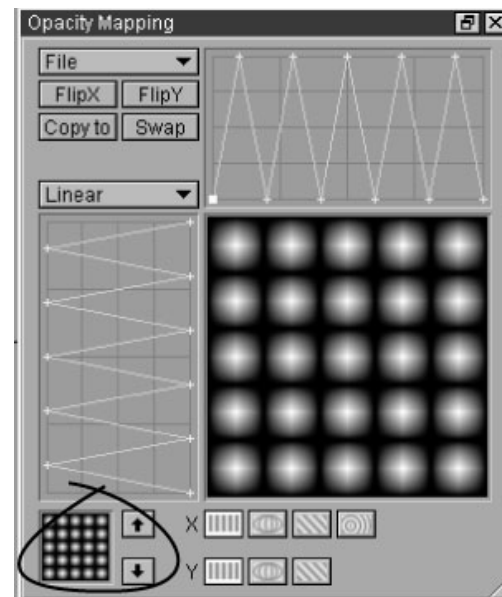
The **Copy to** button will copy the active curve to the other curve. The active curve is the one with the highlighted point – only one point can be highlighted. The **Swap** button will simply swap both curves.

Preset Curves

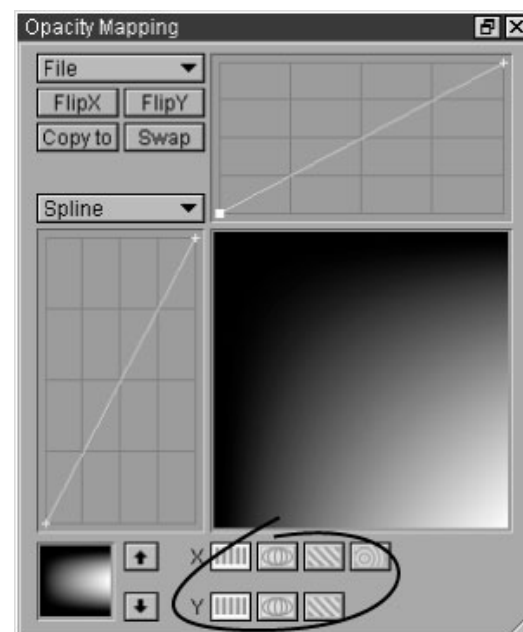
In the lower-left corner, you will find the presets function. You can cycle through the available presets by clicking the up and down arrow buttons. If you find one you like, just click on the little preview window.

Application Modes

The buttons at the bottom of the panel control how the opacity map fills the shape. You use the X and Y buttons to select the application mode of the Opacity range for each curve.



Preset curves preview and arrow buttons



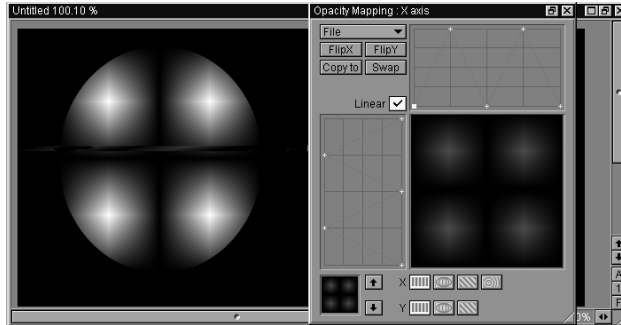
Application mode buttons for Opacity range



NOTE You can deactivate a curve by clicking once on the active mode button. Then, no button is highlighted.



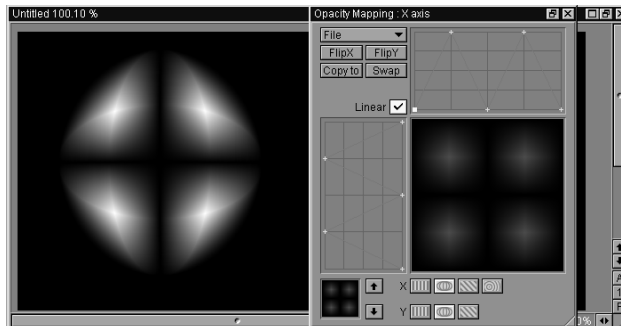
With the uniform mode, Aura applies the curve uniformly over the entire shape to be filled, as a function of the largest dimension (width for the X curve or height for the Y curve) of the shape.



Uniform mode



With the elastic mode, the opacity range follows the outline of the filled shape. The curve is stretched or compressed so that its width or height is equal to the width or height of the shape to be filled.



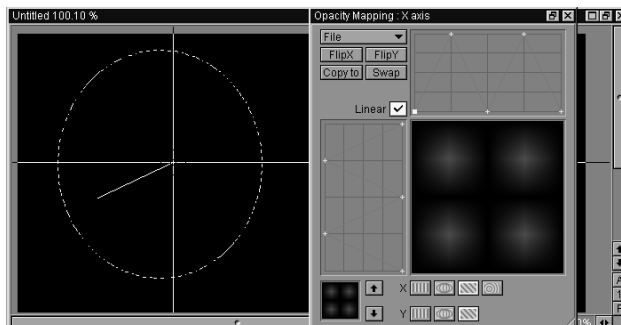
Elastic mode



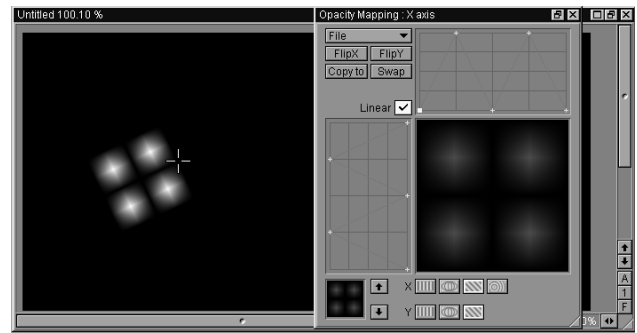
NOTE The elastic mode may generate some irregularities in the range when used on complex shapes that have sudden changes.



The linear mode is similar to the uniform mode, except you can define the direction and extent. After you draw your shape, drag your mouse to define



Dragging the vector for Linear mode

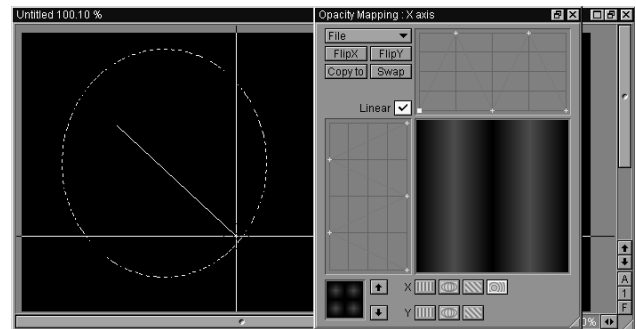


Linear mode results

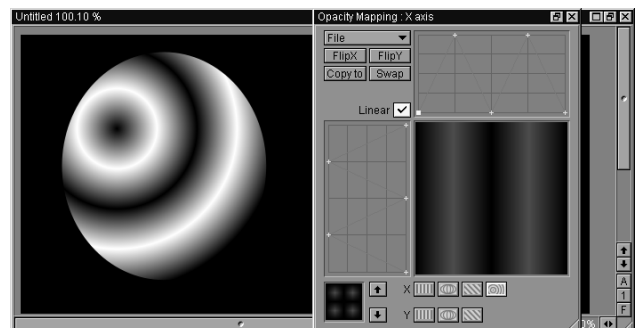
a vector (an elastic line). When the vector is pointing in the desired direction, release your mouse button.



With the centrifugal mode – available only for the X curve – Aura applies the opacity range around a center that you define. After you draw your shape, drag your mouse to define a vector (an elastic line). Your initial dragging point will be the center. When the vector is the desired length, release your mouse button.



Dragging the vector for the Centrifugal mode



Centrifugal mode results



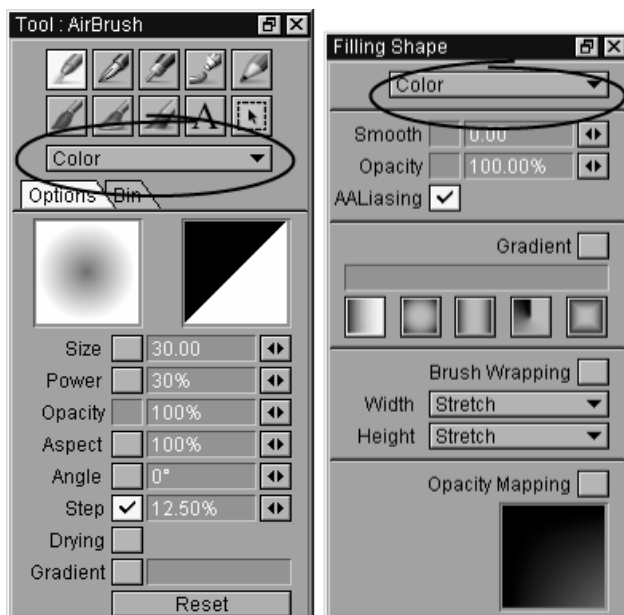
NOTE The modes for the X and Y curves can be set independently.



Chapter 6: Drawing Modes and Paper

DRAWING MODE SELECTION

Generally, you apply color with the drawing tools (air-brush, pen, etc.) using drawing functions (freehand line, lines, etc.). However, you also can lighten, blur, colorize, and apply other effects as you draw. Aura always shows the current Drawing Mode in plain text on the pop-up menu button at the top of the Tool panel. The default mode is **Color**. Use this pop-up menu to select a different mode.



Left: Color pop-up menu button on Tool panel
Right: Color pop-up menu button on Filling Shape panel



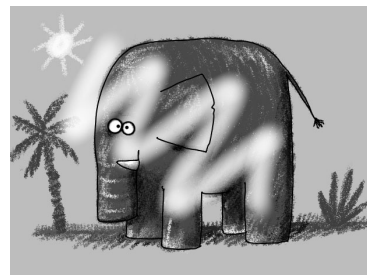
NOTE The available modes will vary depending on the current drawing tool.

SPECIAL ERASING FEATURES

When you draw with the LMB, you use the current drawing mode. The RMB accesses the **Erase** drawing mode. However, if the **Dry** option is off (Tool panel), you erase only the current stroke and do not erase other areas of the frame. Otherwise, you use the normal **Erase** mode. If your tablet has an eraser tip, you can use it to erase as well. With these features, erasing is always available without having to formally select the **Erase** drawing mode.

COLOR MODE

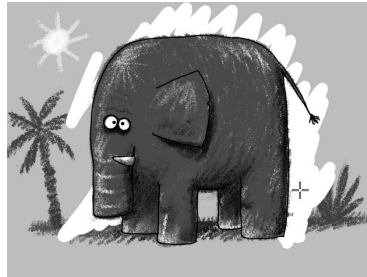
Aura uses the **Color** drawing mode by default when you select a drawing tool. When you draw, you apply the A color to the current image of the current layer.



Color Mode over image in current layer

BEHIND MODE

The **Behind** mode paints only on areas that have little or no opacity – that is, transparent areas.



Behind Mode in transparent areas of layer

For example, suppose you drew a pattern on a transparent background and now you want to draw on the background again without modifying the pattern. Using the **Behind** mode, you can draw as you would normally on the transparent background, but you can't draw anything on the opaque pattern. Furthermore, you retain the opacity variations that smooth edges of the drawing. (For the opposite effect, see the discussion on *Channel Preserving* at the end of this chapter.)

ERASE MODE

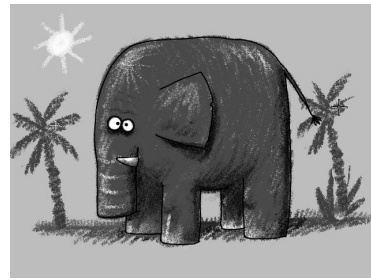
The Erase mode removes opacity, and color along with it. Since this mode is always accessible using the RMB, in most cases, you will not have to select this drawing mode directly.



Erase Mode on current layer

PANTO MODE

The **Panto** mode – short for *pantograph* – lets you clone (rubber stamp) one area onto another. When you select this mode, a second offset crosshair pointer will appear. This marks the source area. The two pointers will move in unison as you move your mouse. When you draw, Aura copies everything that is under the offset pointer to under the normal pointer.



Second tree cloned in Panto Mode

To adjust the offset:

1. Right-click the drawing function button (e.g., AirBrush, PenBrush, etc.) to display the Shape Settings panel.
2. Click the **Set** button. Place your mouse pointer over the approximate source area. Drag your LMB to the approximate target area – an elastic line appears.



Elastic line source and target settings for Panto

3. Release your mouse button.

The X and Y settings indicate the horizontal and vertical offset between the two points, in pixels. You can edit these fields directly.

The Panto mode is extremely useful for touching up scanned images. For example, if you want to erase dust or scratches on a portrait, simply move the second pointer to an intact area of skin and then draw with the normal pointer over the piece of dust. Aura copies the intact skin and makes the dust disappear.



HINT Use the airbrush to help make the copied area as smooth as possible.

MERGE MODE

The **Merge** mode lets you *rub through* one image into another. Merge is similar to **Panto**, except that the source area is on a separate image. It is sort of like stripping off paint from an old dresser to reveal the underlying wood grain. The source image must be stored on Aura's *spare image* (an internal scratch image buffer). If you do not have a spare image, Merge mode is ghosted (i.e., unavailable) on the pop-up menu.



Merging a spare image with the current image

To use the merge mode:

1. Load an image and choose **Edit > Spare > Copy to Spare** (or press Shift+j). This copies your image to the spare image buffer.
2. Clear the image, then select a drawing function and a medium size brush. The AirBrush is ideal for this work.
3. Select the **Merge** mode and draw a few strokes. You'll see the contents of the spare image appear under your brush.

You can use the **Merge** mode to limit the effects of filters to specific areas of an image. If you copy an image to the spare image buffer before applying a filter, you can subsequently merge parts of the unaltered original image into the filtered one. Use **Merge** with text and generate texture in your characters.

SHADE MODE

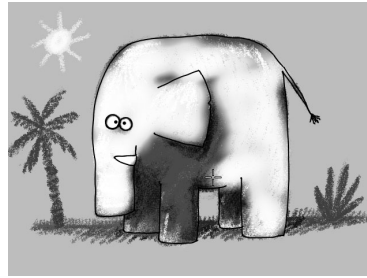
As its name suggests, the **Shade** mode shades (i.e., darkens) colors wherever the brush passes. Several passes over the same location will intensify the effect. This mode has no effect on totally transparent areas.



Darkening the current image

LIGHT MODE

The **Light** mode is the opposite of the **Shade** mode. The brush lightens all colors. Several passes over the same location will increase the effect. This mode has no effect on totally transparent areas.



Lightening the current image

COLORIZE MODE

The **Colorize** mode colors everything with the brush, using the foreground color. Colors are modified during this operation, but their luminosity (brightness) remains the same – you get the same effect using light grey or dark grey. However, since saturation may also be effected, sometimes you get colors that are more intense than the original colors.



NOTE The effect of this mode is not cumulative, so painting the same area repeatedly will not change your initial result.

TINT MODE

The **Tint** mode is similar to the **Colorize** mode, except **Colorize** maintains only the luminosity of colors in the original image, whereas **Tint** maintains the color, luminosity and saturation. The **Colorize** mode will color grays (in red, green, etc.), but the **Tint** mode will have no effect on grays. The **Tint** mode is sometimes more efficient than **Colorize**, particularly because it respects gray levels.



NOTE The effect of this mode is not cumulative. Several passes over the same location with the same color will not change your initial results.

GRAIN MODE

The **Grain** mode adds a subtle random grain to your image as you draw. It is ideal for creating granular texture in unnaturally perfect computer images. Basically, it adds random amounts of shaded pixels to an area. The foreground color has no effect on this mode.



Before Grain

After Grain

SMOOTH MODE

The **Smooth** mode generates a slight blur with your brush. Big brushes and/or repeated passes over a location can increase the effect of this mode.

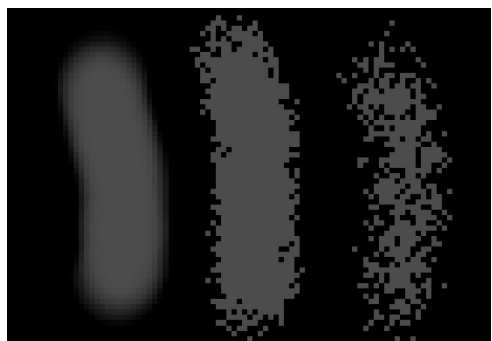
Smooth smoothes the pixels of an image, smoothes the grain of a digitized image, or creates field depth on 3D images, which often seem to lack depth.



Line with Smooth mode blurs the edge of the curve

NOISE MODE

The **Noise** mode draws with the foreground color, like the **Color** mode, but adds random noise instead of varying opacity. Thus, if you use a brush with color at 100% opacity – usually when **Power** is 100% – Aura applies a solid color. If that same brush has areas with lower opacity, like along the edges, Aura applies those areas as random noise instead of lower opacity.



Left: AirBrush, Color mode, 100% Power.
Middle: Noise mode, 100% Power. Right:
Noise mode, 50%

NEGATIVE MODE

The **Negative** mode lets you paint using the *negative* of the underlying colors.



Areas of image painted with Negative mode

SHARP MODE

The **Sharp** mode sharpens an area by increasing the contrast of adjacent pixels. Use this to bring out details in a blurry image. This mode can cause unwanted pixelization.



Before



After Sharp mode



HINT Lower the **Power** of the drawing tool to allow more control over the amount of sharpening.

EMBOSS MODE

The **Emboss** mode makes an area appear raised or stamped.



Before



After Emboss mode

SOLARIZE MODE

The **Solarize** mode blends an area with the negative of itself.



Before

After Solarize mode

SATURATE MODE

The **Saturate** mode increases the amount of color saturation in an area. You can use this mode to enhance the colors in a washed-out image.

UNSATURATE MODE

The **Unsaturated** mode decreases the amount of color saturation in an area. Use this mode to help tone down an image with oversaturated areas of color that seem unnatural.

ADD MODE

The **Add** mode takes the color information in each channel and adds your A color to the image colors. The resulting color is usually lighter. Drawing with black leaves the color unchanged. Drawing with white produces white.

SUB MODE

The **Sub** (subtract) mode subtracts the image colors except for the A Color. The resulting color is usually darker. Drawing with black leaves the color unchanged. Drawing with white produces black.

MULTIPLY MODE

The **Multiply** mode takes the color information in each channel and multiplies the A color by the image colors. The resulting color is usually darker. Multiplying any color with black produces black. Multiplying any color with white leaves the color unchanged. When you're painting with a color other than pure black or white, successive strokes with a painting tool produce progressively darker colors, if **Drying** is active. The effect is similar to drawing on an image with magic markers.

SCREEN MODE

The **Screen** mode takes each channel's color

information and multiplies the inverse of the A color and the image colors. The resulting color is usually lighter. Screening with black leaves the color unchanged. Screening with white produces white. The effect is similar to projecting multiple photographic slides on top of each other.

CHANNEL PRESERVING

You can independently preserve color channels, which prevents operations from affecting them. The channel buttons are located on the menu panel. From left to right, they are the transparency, red, green and blue channels. When active, the button will be highlighted.



Channel buttons on the menu panel

If you preserve the transparency channel, your paint will adhere only to places where there is already paint. This allows you to replace color – but not opacity – as you draw. The transparency channel is similar to a stencil (alpha mask), but is effective only where there is already some color. This works quite well with layered images. (Using the transparency channel is the opposite of the **Behind** drawing mode.)



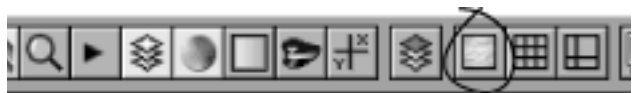
Replacing color by drawing with the transparency channel

For example, suppose you drew a red pattern on a transparent background and you want to draw details in the red without modifying the background. If you preserve transparency, you can draw as you would normally on the opaque red, but you will not be able to draw anything on the transparent background (i.e., where opacity is zero). Furthermore, opacity variations that smooth edges are retained on the outlines of your red pattern.

If you preserve any of the RGB channels, operations will not affect the preserved channel(s) no matter what color you may be drawing with.

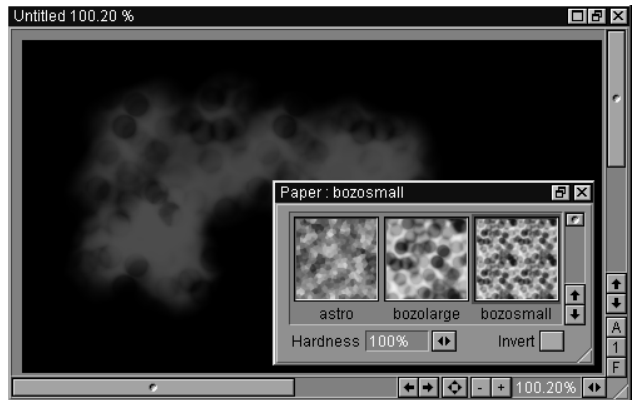
PAPER TEXTURES

Aura can adjust the density of the ink you apply, as if you were drawing on a textured surface. You activate this feature by clicking the Paper button on the menu panel.



The Paper button on the menu panel

To select a paper texture, right-click the button. The Paper panel will appear.



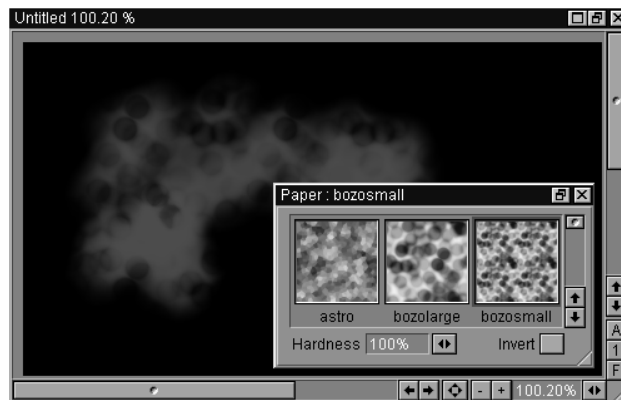
Paper panel, examples of paper textures, and paper settings

Click on any icon to select that paper texture. Use the scrollbar to see more icons.

You can adjust the **Hardness** setting to vary the overall effect of the paper texture. The **Invert** option will invert the texture effect.

CUSTOM PAPER TEXTURES

You can create custom paper textures since they are just image files whose brightness levels are used to apply the paper texture – color information is ignored. The files must be saved to the Papers subdirectory of the main Aura directory. *Tileable* images – those that can be placed side by side without a visible seam – work best, but this characteristic is not an absolute requirement.



'Spunky' as a custom paper texture



NOTE When you create your own paper textures, they are available only after you restart Aura.



Chapter 7: Layers

The concept of layers in a paint program is common these days. With layers, you organize your work by placing various elements of your images in different layers, making it much simpler to modify elements without affecting others. Layers are placed on top of each other and mixed in realtime taking into account the transparency of each element.

Aura, however, takes layers a giant step beyond the norm by allowing you to manipulate them in time. Layers can be animated, even holding moving video!

THE LAYER PANEL

The Layer panel defines the beginning and duration of each layer in time, and the order in which layers are overlaid. (If you are starting from a blank new

working page, you will see only a single layer.)

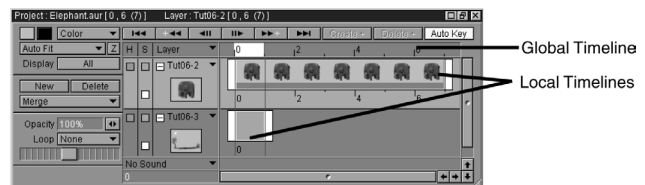
If the Layer panel is not visible, click its visibility icon on the menu panel.



The Layer button the menu panel

TIMELINE ANATOMY

The global timeline is the graduated scale at the top of the panel. By default, Aura lists frame numbers from 0, increasing to the right. You can use this as an overall reference in determining the length of a project.

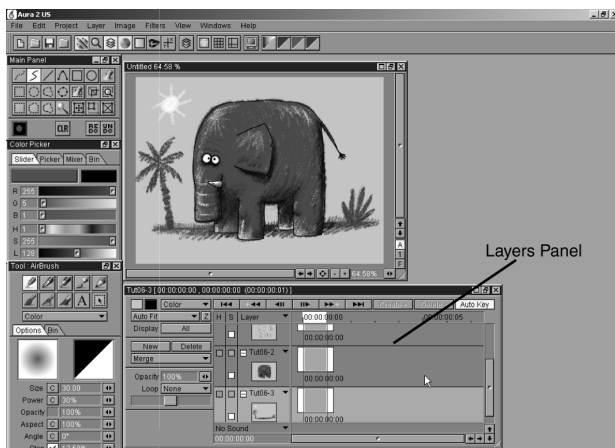


Timelines on the Layer panel

Local timelines appear beneath their corresponding layer bars. These will not necessarily match the global timeline, if, for example, the layer starts at a frame other than 0.

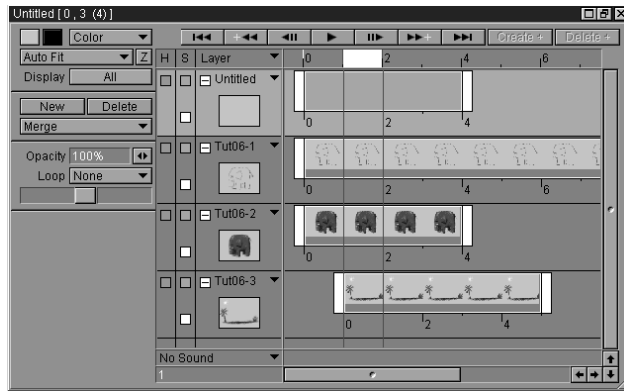
LAYER LIST

Aura lists layers beneath the global timeline. The order of the layers determines how Aura composites



The Layer panel in the Aura interface

them to form the resulting image. Each layer can have independent transparent properties, which are interpreted from top to bottom. The top layer in the list forms the foreground and is placed in front of all other layers. If any part of the top layer is transparent, the contents of the next layer in order can be seen behind it, and so on through the stack of layers. Each subsequent layer appears behind the layer above it, but in front of all others, until you reach the last layer.



Four layers in the layer list: Untitled, Tut06-1, Tut06-2, Tut06-3

You use the slider to the right of your layers to scroll the list vertically and the slider beneath the layers list to scroll horizontally.



NOTE Although not technically a layer, the background, discussed later, may be visible beneath all layers.

LAYER TYPES

Aura offers three types of layers: image, anim and video layer. An image layer contains a single still image, represented by a blue bar. Note that an image layer can occupy more than one frame, just like an animation layer. However, that layer uses the same picture for every frame. This is the default layer type; when you first create a layer, it is an image layer.



Image layer

An animation layer contains a sequence of frames, represented by a series of thumbnail images. For this kind of layer, the picture can vary in each frame. You create an anim layer, by clicking the RMB on the layer itself and selecting **Make Anim**.



Animation layer

A video layer is similar to an animation layer except you can apply only limited changes to this layer. You create a video layer by importing an animation, image sequence or video clip without checking the **PreLoad** box in the import requestor, as discussed in Chapter 2. Video layers cannot be sized or affected by filters, however they have a built-in alpha channel and can be moved in time and looped. Use video layers to bring in loopable elements or background video.



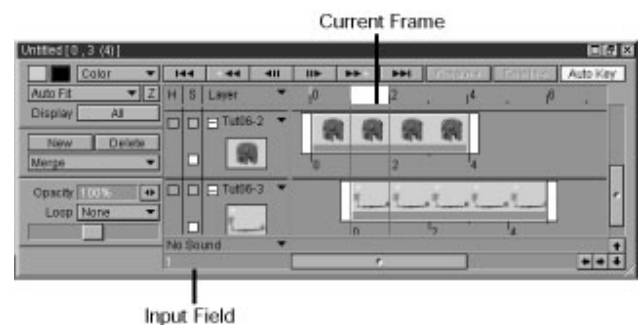
Video layer



NOTE Non-PreLoaded layers load instantly no matter how large the file.

THE CURRENT FRAME

You can identify the position of the *current frame* by a white rectangle on the global timeline. Two vertical red lines border the left and right sides; these lines indicate which images in the various layers are included in the current frame. To change the current frame, simply click on a frame on the global time line. You also can scrub the layer by clicking the LMB and dragging in the global timeline.



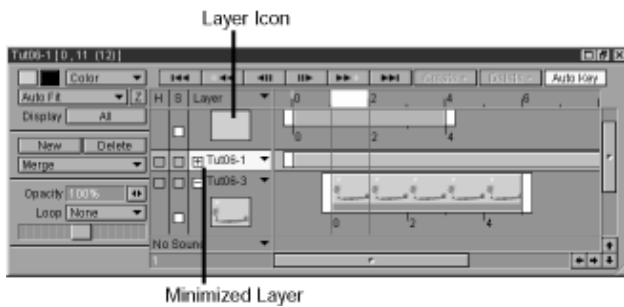
The current frame input field displays the number of the current frame. You can enter a value here to jump to a specific frame.



NOTE You cannot select a current frame that is before the beginning or after the end of the current layer (discussed later).

THE LAYER COLUMN

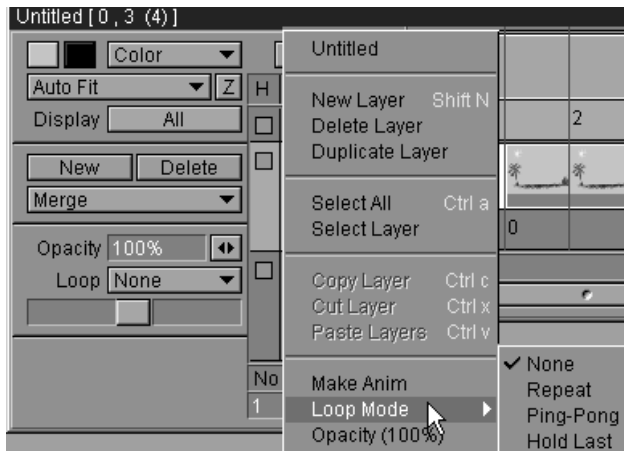
The Layer column holds the layer icon, which usually shows a thumbnail of the image for the layer at the current frame.



Above the layer icon is the layer name. To the left of the layer name is the minimize/maximize layer button. When the layer icon is visible, the layer is maximized and the button displays a minus sign. Click this button to minimize/maximize all selected layers. The button changes to a plus sign for a minimized layer. Click it again to maximize the layer.

The Layer column also has an associated pop-up menu, which you can bring up in a number of ways:

- Click the downward-facing triangle button
- Click the layer name or
- Right-click the layer icon



Layer column pop-up menu

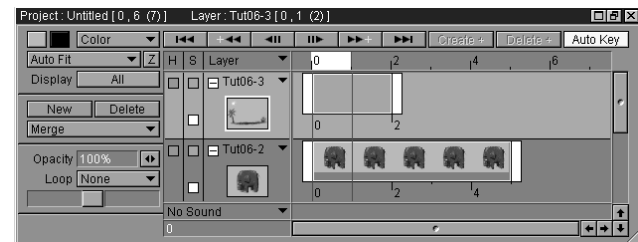
The functions of this menu are discussed later; however, generally, they affect the layer beneath your mouse pointer when you open the menu and not the current layer.

Timecode Format

By default, Aura shows all time references in frames. In the titlebar for the Layer panel, you will see a heading for Project and one for Layer and beside each heading there are three numbers. For the Project heading, the first two numbers indicate the location of the project's first and last frames, and the third number is the length of the project. That is, the

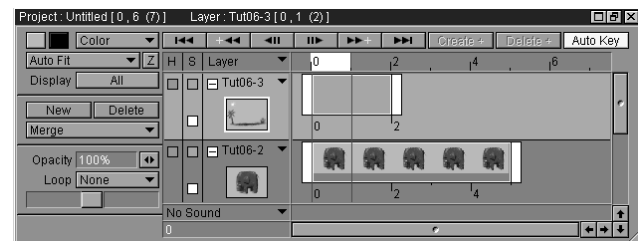
last frame in time, for any layer. For the Layer heading, the first two numbers state the location of the selected layer's first and last frames, while the third number shows the last frame for that selected layer.

You can change the time format to a timecode format (HH:MM:SS:FF.field) by clicking on the Layer

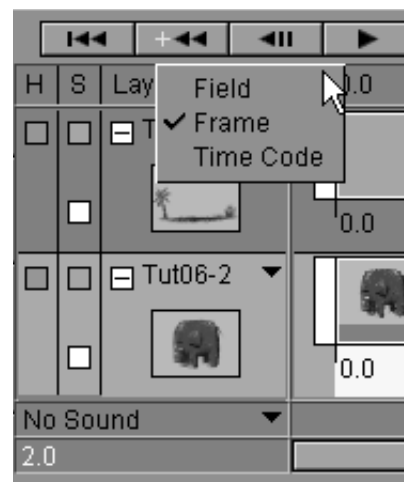


Layer title bar with time references in Frames

column heading. Here, you can choose between **Time** (i.e., frames), the default, **Timecode**, or **Fields** (if you use a project with fielded data).



Layer title bar with time references in timecode format



Click on the Layer heading to change the time format



NOTE When you use Timecode, the frames (i.e., FF) will increment to seconds based on the project's Frame Rate setting. If you use Fields, the field value will be 0 or 1. The timecode displayed for NTSC projects using a Frame Rate of 29.97 will be in dropframe format, whereas a Frame Rate of 30 invokes a non-dropframe timecode display.

THE CURRENT LAYER

Aura carries out all operations (drawing, applying filters, etc.) in the current layer. This layer is light gray in the list.

Aura gives you several ways to select the current layer. First, you can simply click the layer icon. You also can use your Up and Down Arrow keys to change the current layer. Finally, you can click anywhere in a layer's local timeline – this also selects the current frame.

SELECTING LAYERS

You can select layers for certain operations like deleting and moving. Click on a layer icon to select it. To add to the selection, hold the Shift key and click. You can also select a layer and Shift-click to select a layer several layers away, which also will select all layers in-between. To add certain layers to the selection without selecting layers in-between, Ctrl-click the layers you want.

You can select all layers by choosing **Select All** from the Layer column pop-up menu or by double-clicking any layer icon. Choosing **Select Layer** will select the current layer as well as the layer beneath your mouse pointer when you opened the menu.

You can deselect layers by clicking in the Layer column, outside of the layer icon.

LAYER OPACITY

In controlling opacity at a pixel level, you also can set the overall opacity for each layer. Do this by selecting the layer and then adjusting the **Opacity** setting. Each layer can have its own independent setting and Aura updates your changes to layer opacity in real-time.



The Opacity field on the Layer panel

LAYER ORGANIZATION AND SIZING

You can add new blank layers or create additional layers by importing existing image files. Layers also can be graphically organized any way you want. This includes changing a layer's position in time as well as its playback length (duration).

Adding Layers

There are two basic ways to add more layers: add a new blank layer or import an image/sequence. To add a new blank layer, just click the **New** button on the Layer panel or choose **New Layer** from the Layer column pop-up menu. The new layer automatically becomes the current layer. For information on importing a file, see Chapter 2.

Normally, Aura places your new layer above the current layer in the list. However, if you hold the Shift key while you click the **New** button, Aura places the new layer below the current layer.



NOTE Initially, new layers created by the use of the **New** button will be named **Untitled**. If the new layer was created by loading in an image or animation sequence instead, the layer will be named for the file loaded.

Naming Layers

The very first item in the Layer column pop-up menu indicates the name of the layer. If you select this, a dialog box appears that you can use to change the layer name. Click on **OK** to set the new name or click on **Cancel** to keep the old name. Naming layers is important when organizing your project; you should name each layer as it is created. You also can set up a keyboard shortcut to rename a layer.

Copying and Pasting Layers

You can copy selected layers to an internal buffer by choosing **Copy Selected Layers** from the Layer column pop-up menu. You can copy layers to the buffer and delete them from the project in one step by choosing **Cut Selected Layers**. Unless you select and highlight a layer, the Copy Layer and Cut Layer options appear ghosted in the menu. If you select a layer but do not highlight it, (a yellow border on the layer icon), simply left click it again.

If you have no layers selected, you can paste the layers in the buffer above the current layer by choosing **Paste Layers**. If you have layers selected, the pasted layers replace the selected layers. *You can even cut, copy and paste layers between different projects.*

In the same menu, you have an option to **Duplicate Layers**. When you select this option, you automatically copy and paste any selected layers.

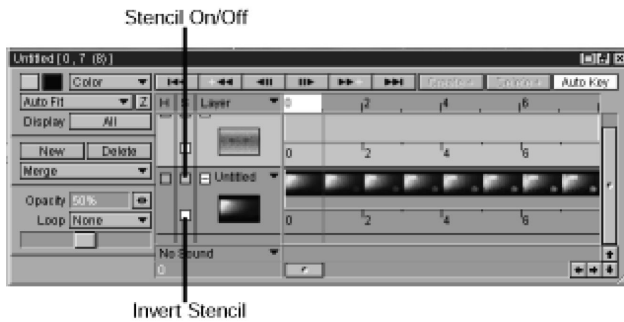
Deleting Layers

You can delete the current layer (and other select-

ed layers) by clicking the **Delete** button. (Alternatively, you also can choose **Delete Selected Layers** from the Layer column pop-up menu.)

STENCIL OPTIONS

To the left of the Layer column is the Stencil column. The top button turns the layer into a *stencil*. Yellow indicates an active stencil and gray means inactive. The lower button inverts the stencil effect. White represents the default stencil and black represents the inverted stencil.



When you turn a layer into a stencil, Aura disregards its position with respect to the stenciling operation. The Stencil acts as a mask and therefore, on any other layer in the project, you can paint only where there is paint in the Stencil layer. You can have multiple stencil layers, which are aggregated together. You also can use animated layers as stencil layers, which allows you to create moving masks.

When you turn on Stencil, you also activate the global stencil option on the menu panel. You can use this option to globally turn the stenciling function on or off.



If you click the **S** at the top of the Stencil column, a pop-up menu appears where you can turn off Stencil for all layers (**Clear all stencil**) or toggle the invert state for any stencil layers (**Invert all stencil**).

Creating a stencil

You can create a stencil from any tool or shape in Aura, and you can use special effects such as opacity mapping, paper or filters for interesting results. You must first create the shape that you want as your stencil on a new layer, along with any special effects that you want to include. After you've made all of your adjustments, you convert the layer to a stencil. Once you have converted a layer to a stencil, you cannot make any changes to the stencil image unless you turn off Stencil.



The Stencil shapes restrict you from painting outside of the shapes. Note that on the Layer panel, the two stencil layers are hidden



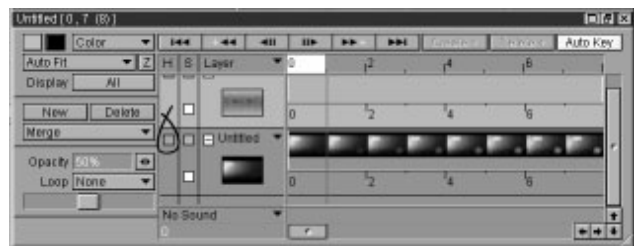
NOTE You may want to hide stencil layers, which is discussed next.



NOTE Aura's selection functions, discussed in Chapter 3, also allow you to limit the paintable area.

HIDING LAYERS

To the left of the Stencil column is the Hide Layer column. When a layer is visible, the box in this column is green. If you click the box, the box turns red to indicate that the layer is hidden.



The Hide Layer box on the Layer panel



NOTE You cannot hide the current layer. If the layer you want to hide is the current layer, select a different layer as the current layer first.

You also can use the Layer **Display** mode to display just the current layer or all layers (normally). Clicking the **Display** button (or pressing =) will toggle between **All** and **Current**.



The Display mode on the Layer panel

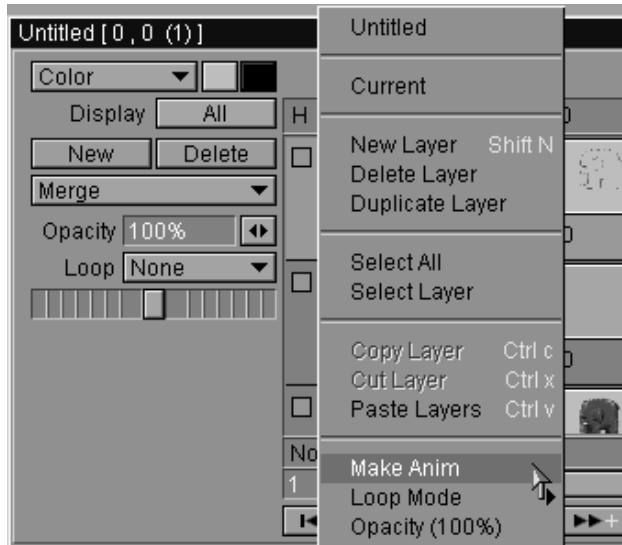
If you click the **H** at the top of the Hide Layer column, a pop-up menu appears where you can unhide all layers (**Show all Layer**) or hide all layers, except the current layer (**Hide all Layer**).



NOTE The display mode and *hide-layer* attributes affect which layers will be used when exporting an image or a sequence (but not saving a project). Hidden layers will not show up in an exported image or sequence.

CREATING ANIM LAYERS

Creating a new layer using the **New** button creates an image layer by default. To convert it into an animation layer, choose **Make Anim** from the Layer column pop-up menu. (Alternatively, you can also choose **Make Anim** from the pop-up menu that appears when you right-click over the layer bar.)



The *Make Anim* option in the Layer column pop-up menu



NOTE The **Make Anim** menu item will not appear if the layer is already an anim layer. Also, if the layer was not preloaded (i.e., it is uneditable) a **Change to PreLoad Layer** menu item appears, which allows you to convert the layer to a regular anim layer.

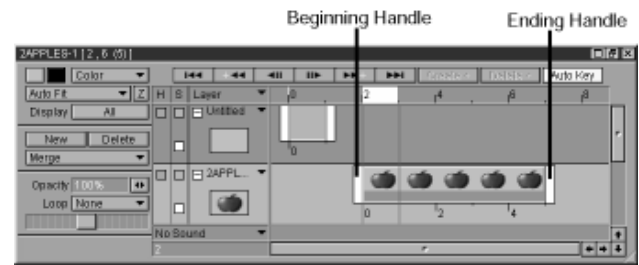
Adjusting the Starting Frame and Duration

Both image and anim layers have a starting frame and duration. The position of the left edge of the layer bar – relative to the global timeline – indicates the starting frame and the length of the bar indicates its duration. You change the starting position of a layer by simply dragging the layer bar left or right with your mouse.

To move the entire layer in time, just drag it left or right with your mouse, but don't drag on the beginning or ending handles, described below. Generally, you cannot make a layer begin before frame 0. However, if you hold the Shift key down, you can position a layer to begin in a frame preceding 0.

To change the duration of a layer, you must drag the handles located on either side of a layer. The layer

bar will follow the movement of the pointer by stretching or contracting.



Drag the handles on either side of the layer to adjust the layer duration

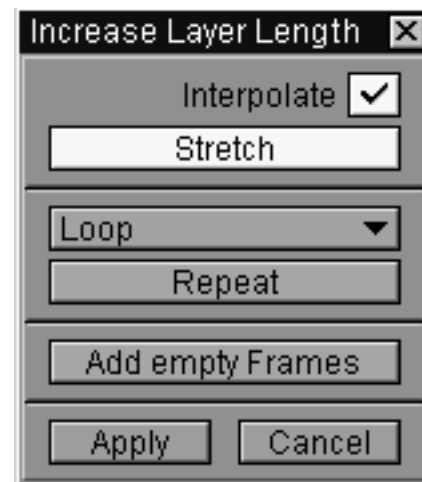
Image vs. Anim Layers

When you adjust an image layer, you simply modify the duration of the still image display in the project. For example, if you move the start tab to the left, the image display starts earlier in the project. If you move it to the right, the image display starts later in the project.

When you adjust the duration of an anim layer, you must decide how you want Aura to interpret the change.

Increasing a Layer's Length

When you release the mouse button after increasing a layer, a special panel appears.



Increase Layer Length panel with Stretch and Interpolate activated

If you accept the default settings, which use **Stretch** with **Interpolate**, Aura modifies the duration of the layer and attempts to keep the data (relatively) intact. It does this by interpolating missing images when you increase the duration of the layer, or it superimposes a number of images by degrees of transparency from the original layer into the same image if you reduce duration. If you choose not to **Interpolate**, Aura changes the layer duration by duplicating frames.

Instead of the **Stretch** mode, you can use the **Repeat** mode, which has several options.

The **Loop** option fills the added frames by repeating the existing layer starting with its first frame. It continues to loop through the layer, from start to finish, until no additional frames are needed.

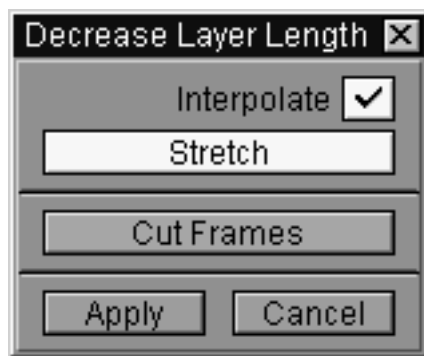
The **Ping Pong** option is similar to Loop, except the repeating starts with the end of the existing layer, works back to the front, front to back, etc. – back and forth, like a ping pong ball.

The **Hold Last** option simply repeats the last frame to fill the increased duration.

 **HINT** Use **Hold Last** to get a brush to hold position after you animate it; for example, a logo that flies in and stops. Stretch the layer out for as long as you want to hold the logo in the project and select **Hold Last**.

Decreasing a Layer's Length

When you decrease a layer's length, a special panel appears.



Decrease Layer Length panel with Stretch and Interpolate activated

You can either use the same Stretch and Interpolate settings, as discussed above, or simply trim off the end frames using Cut Frames.

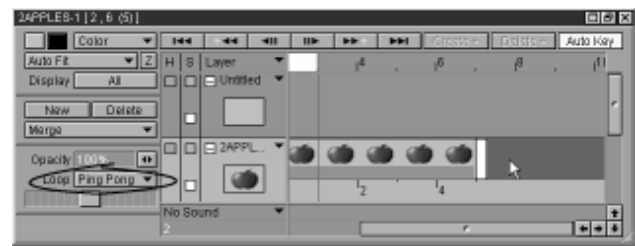
Layer Loop Mode

The end of your project is the last visible frame that can be from any layer. Layers that end before this normally just stop and are not considered for frames past their end. You can change this using the layer **Loop** option. This option, in effect, can automatically fill the frames after the layer's end, up to the length of the project.

The option has three settings. **Repeat** mode will simply loop through the layer, from start to finish, over and over. **Ping Pong** repeats by using the end of the existing layer, then working back to the front, front to back, like a ping pong ball. The **Hold Last** option simply repeats the last frame.

When you set a **Loop** mode other than **None**, you

will see a dark gray bar extend from the end of the layer bar.



Loop modes for anim layers on the Layer panel



NOTE For operations like merging, Aura treats the repeating frames as if they actually exist.



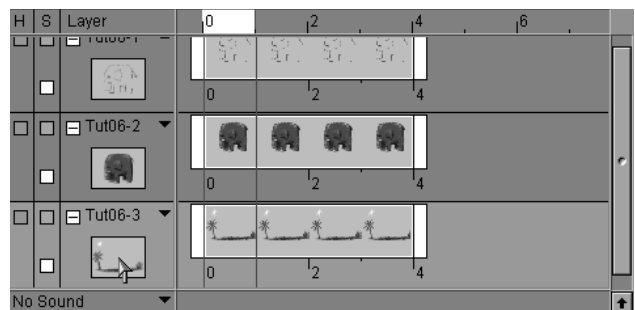
NOTE You can increase or decrease layers when you have multiple layers selected. Aura applies your changes to all of the selected layers.

Rearranging Layers

As explained previously, layer order determines how Aura interprets your final result. As such, layer order is extremely important. You can easily rearrange layers by dragging layer icons.

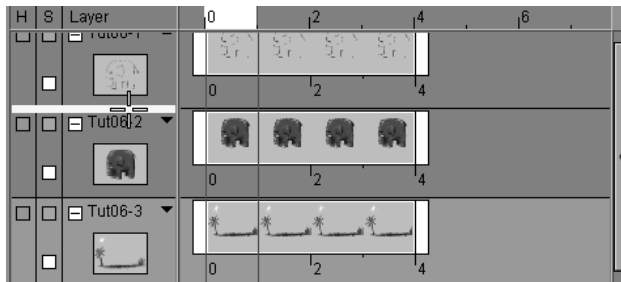
To move a layer in the list:

1. Place your mouse pointer over the layer icon, and press and hold your LMB.



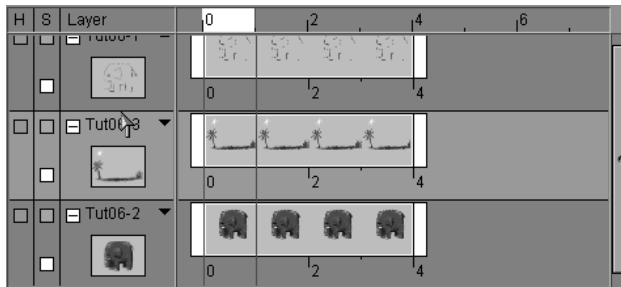
Place mouse pointer over the layer icon

2. Drag your mouse pointer up or down, as desired. As your pointer passes between layers, a thick yellow line will appear. This indicates a dropping point for your layer.



Drag mouse pointer; thick yellow line indicates a dropping point

3. Release your mouse button. The layer is moved to the new position. Your project window will be updated immediately to account for the new layer order.



Release mouse button to place layer in new position



NOTE You can move layers when you have multiple layers selected. Aura applies your changes to all of the selected layers.

Merging Individual Layers

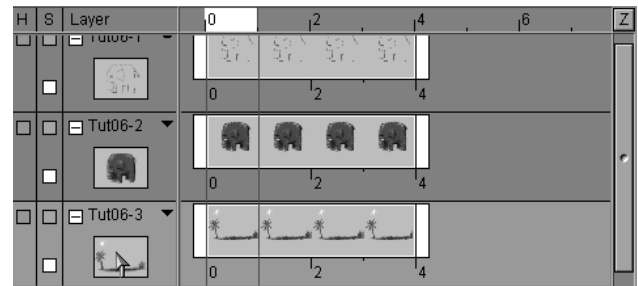
You can merge layers using the drag-and-drop method. When you work on a project, you usually create several layers in which you will place various elements of your image or sequence. Thus you can modify one part of your project, without affecting the other parts. When you finish working on some elements in your project, you can collect them in the same layer. Then you can act on several elements at the same time without constantly repeating the same operation.



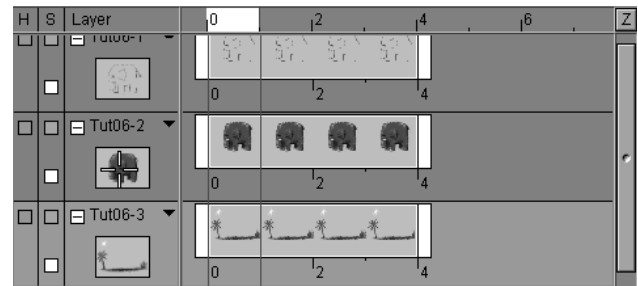
NOTE Merging a layer over another is like making the entire layer into a custom brush. You can paste it down using many of the same drawing modes.

To merge a layer in the list:

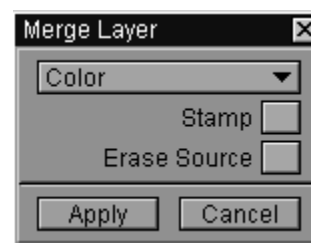
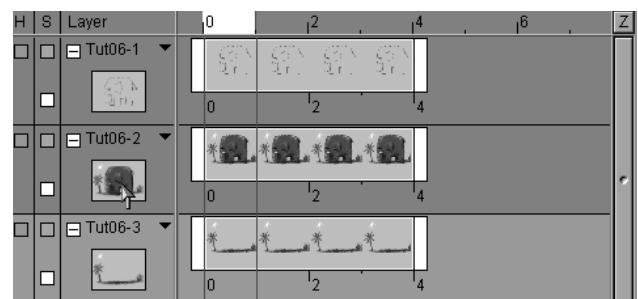
1. Place your mouse pointer over the layer icon, and press and hold your LMB.



2. Drag your mouse pointer over the target layer.



3. Release your mouse button and a dialog box appears. You can just use the default **Color** mode to paste the layer over the target layer or use the pop-up menu to select a different drawing mode. (Drawing modes are discussed in Chapter 6.) The **Stamp** option will stamp the layer using the A Color. Activate the **Erase Source** option if you want to delete the source layer after it is pasted.



Above: Merge Layer dialog box offers options for pasting the layer

Below: Tree and sun from Tut06-3 pasted into Tut06-2



NOTE Merging layers also takes into account preserved channels, discussed in Chapter 6.

Other Merging Options

The Merge button contains some other merging options.



The Merge pop-up button on the Layer panel

If you have multiple layers selected, you can choose **Merge Selected**. They will be merged top to bottom so you may want to re-order them before using this function.

Merge Visible will merge all of the layers that are not hidden.

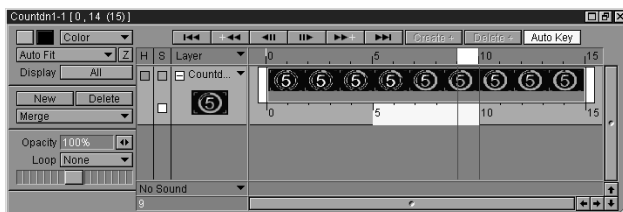
Merge All flattens the contents of all layers into a single layer. The duration of the resulting layers is equal to the total duration of the project. This means that if you apply this function to two layers, one of which contains frame 0 to frame 10, and the other contains frame 8 to frame 20, the resultant image will go from frame 0 to frame 20. Only the first layer will be present from frame 0 to frame 8, both layers will be overlaid from frame 8 to frame 10, and only the second layer will be present from frame 10 to frame 20.

FRAME EDITING

In addition to globally adjusting the position and size of layers, you also can move individual frames around in time, as well as insert new frames in a layer or delete existing ones.

Selecting and Unselecting Frames

You can reorganize layers and you also can cut and paste frames within the same layer or between



Drag on the layer's timeline to select one or more frames

layers. To use these commands you must first select one or more frames. Do this by simply dragging on any layer's local timeline.

You also can select the current image and subsequent images in the layer by pressing on the Shift+Right Arrow keys, or you can select the current image and previous images in the layer by pressing on the Shift+Left Arrow keys.

To deselect this selection, click nearly anywhere in the layer list area.

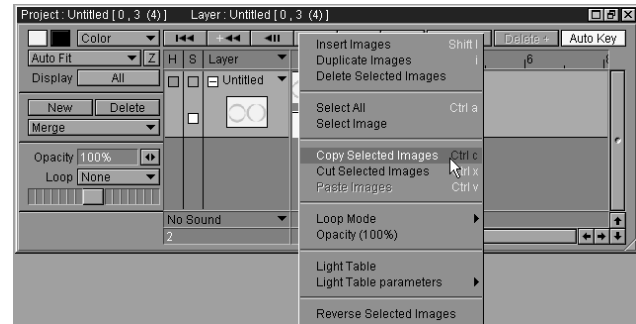
To select all images in a layer, choose the **Select All** from the Layer column pop-up menu, or double-click on the layer itself. To select a specific frame, choose Select Image from the menu.



NOTE If you use the **CLR** function, discussed in Chapter 1, on selected frames, they will all be cleared.

Cut and Paste Operations

After you select your frames, right-click over the layer bar. Choose **Copy Selected Images** to store the contents of the selection in a temporary memory buffer. If you'd like to also delete the frames, choose **Cut Selected Images**.



Right-click over layer bar to copy or cut selected images

Once you've copied or cut your frames, the **Paste Images** menu item becomes available. Choose it to insert frames before the current frame. Note that if part of the current layer is selected, the pasted frames will replace those selected frames.

You also can choose **Duplicate Selected Images** from the menu to add one or more copies of the current frame. Aura inserts the duplicate frames after the current frame in the layer. When you use this command, a dialog box appears that lets you set the number of frames to add. If you want to add only blank frames, you can choose **Insert Images**.

You can reverse the order of selected frames in one step by choosing **Reverse Selected Images** from the pop-up menu.

USING THE LIGHT TABLE

Aura includes a light table (also called *onion skinning*) that can simultaneously display up to seven frames before and after the current frame of an anim layer. (If the current layer is a still image layer, this option is not available.) The before-after frames are for reference only and are ghosted (displayed with variable opacity depending on their distance from the current frame). Each layer can have its own independent light table settings.

You can set the opacity of the light table for each layer; the default value is 50%. To adjust the opacity, RMB on an anim layer, and choose Light Table Parameters. Or RMB on the light table's toggle button (the middle button) to launch the Light Table Opacity panel.



The Light Table option activated on the Layer panel

You specify the number of frames to show by clicking in the light table cells to the left or right of the center button. (You also can drag your pointer over the cells.) The selected cells turn yellow. When you select cells to the right, Aura shows frames that follow the current frame. When you select cells to the left, Aura shows preceding frames. You even can select cells on both sides, if desired.

Clicking on the center button toggles off the light table. Clicking it again restores the selected cells. To specify whether the Light Table displays in front or in back of the current frame, go to the menu at the top of the screen and select **Project > Light Table**, then choose between **Front** or **Back**.



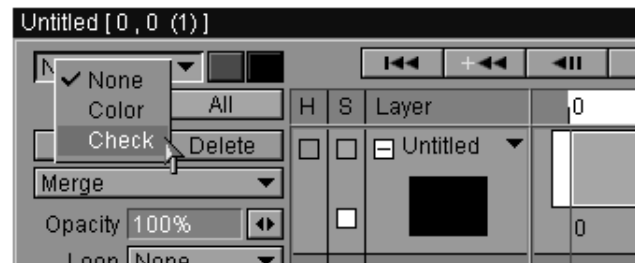
NOTE Ghosted frames are for reference only; you can draw only on the current frame and layer.



NOTE To leave the Light Table active without showing previous or future frames, drag the previous or future cells in the Light Table display to the center. You cannot turn off the preview cells by clicking the center cell.

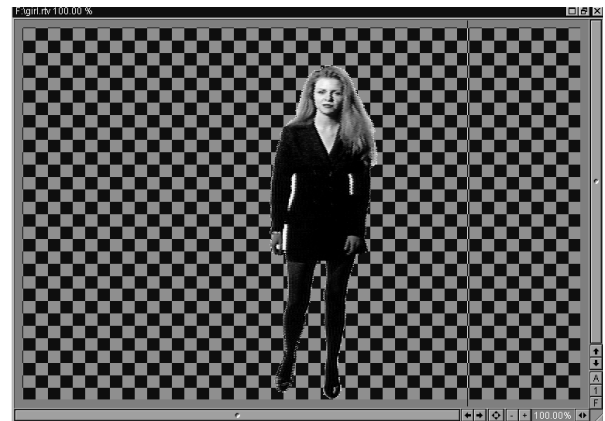
THE PROJECT WINDOW BACKGROUND

The project window is where you draw and perform your image editing chores. The default is none, which appears to be black but is actually complete transparency or no color. You can change the background using the **Color** pop-up menu located in the top-left corner of the Layer panel.



The Color pop-up menu on the Layer panel

Two color settings on the Layers panel can affect the background. They are indicated on the two color selection buttons to the right of the pop-up menu. If you select **Color** from the pop-up menu, Aura uses the color shown on the left button. If you select **Checked**, Aura creates a checkerboard pattern with both colors for the background.



Checkerboard pattern for background



HINT A **Checkerboard** background works well when it is critical to be able to see the transparency between layers and the background.



NOTE When exporting an image or sequence, the background is included as part of the saved image. However, if the **None** option is used with a 32-bit export file mode, like TGA 32, Aura saves the transparency of the various layers as an 8-bit alpha channel.

VIEWING AN ANIMATION

To view your animation, you can use the VCR controls near the top of the panel or you can scrub the timeline. The play button in the middle of the VCR



Preview controls on the Layer panel

controls launches a remote control. From the remote control you choose the options for running your animation in the work area.

Preview Settings

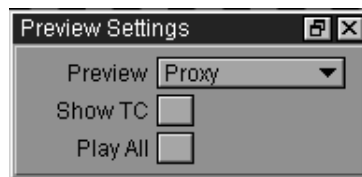
Aura offers three types of previews that work with the remote control: **RealTime**, **Proxy**, and **Render**. You select a preview setting by clicking your RMB on the play button, or choosing **Windows > Preview Settings**. You also can launch this panel by clicking on the Proxy bar in the main menu.

The **RealTime** preview creates an animation on the fly and always reflects the current state of your project. Frames are dropped, if necessary, to achieve the project's frame rate.

The **Proxy** preview is created while you work in Aura. The preview file is stored in the temp directory, and frames that are not yet rendered are built during the playback.

The **Render** preview is created before the playback and saved on disk. The next time you play your project, Aura re-renders only frames that have changed since you saved the project.

Aura also offers the Format option, which lets you choose the colorspace for your preview. An **RGBA**



The Preview settings panel



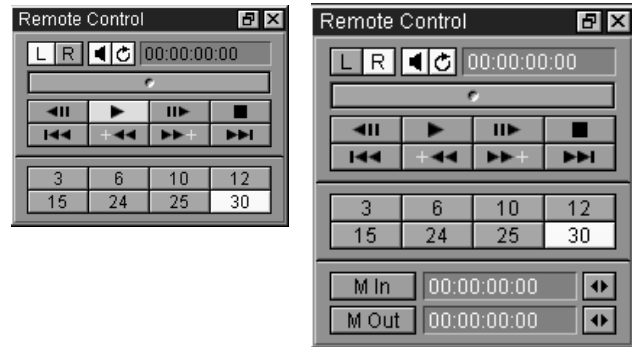
The Proxy bar on the main menu

preview is built in 4:4:4 RGB color space with an alpha channel. A **YUV** preview is built in 4:2:2 YUV color space without an alpha channel. A **YUVA** preview is built in 4:2:2 YUV color space with an alpha channel.

To display timecode over your preview, activate **Show TC**. Enable **Play All** to play all frames in your project; frame rate will be disregarded. Disable this option to play the preview at the correct frame rate for the project; the preview may drop some frames.

Remote Panel for Previews

You can run a preview by clicking on the play button or choosing **Windows > Remote Panel**. The Remote Panel opens, and here you can change settings while your preview runs. You also can change your project's navigation functions while a preview runs (e.g., navigator panel, Project windows buttons such as Pan, Zoom, Fit, 1:1, and shortcuts like Alt + LMB/RMB).



Remote control to play previews

Interfaces

Two interfaces are available on the Remote panel. The **L**, or layer, mode plays the entire project or a selected sequence. The **R**, or range, mode plays the range that you define by using the **M in** and **M out** (Mark In and Out) buttons, which are available only in **Range** mode.

The speaker button enables or disables sound during the preview. The clockwise button enables or disables Loop mode. So, if you want the preview to repeat when it reaches the end, activate Loop mode.

Scrubbing the Project

You can scrub along the project by using the slider. The default position of the slider represents the current frame.

- Use the RMB to scrub and keep the current frame when you release the slider.
- Use the LMB to scrub and change the current frame to cursor position when you release the slider.

VCR Buttons

The VCR buttons should be familiar. The upper row contains the basic controls: Previous Frame, Play, Next Frame, and Stop. The lower row lets you jump to the beginning, rewind, fast forward, and jump to the end. Also, you can RMB over the VCR buttons to open the Preview Settings panel.

Keyboard Shortcuts

Keyboard shortcuts let you override the remote panel:

- Esc stops playback and Aura returns to the current frame position

- Space/Enter stops playback and Aura jumps to the current slider position

When you play a preview, the Aura interface is locked, so only the Remote Panel is active. However, you can use Alt + LMB/RMB during preview playback.

Frame Rate

The buttons below the VCR controls let you change your frame rate while you play your preview. Double-click on a setting to change the frame rate value to the current project frame rate. Click with the RMB to enter a specific frame rate in an input field.

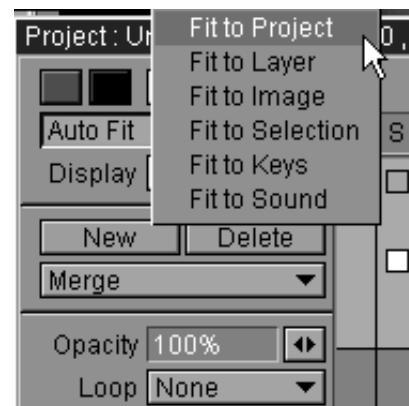
Scrubbing the Timeline or a Layer

Scrubbing the timeline means that you drag your cursor along the timeline and see the project play in the work area as you drag. You can drag with your RMB and when you release it, Aura returns to the original frame you selected before you scrubbed. Drag and release with the LMB and Aura selects the last frame under your cursor.

You also can scrub a layer, so that you see only the action of your selected layer in the display area. Drag the mouse down, and you change the current layer. Move outside of the layer panel to return to the original layer. Drag with the RMB, and the preview shows only the action of the current layer.

Layer Display Magnification

The **Auto Fit** pop-up menu is in the top-right corner of the Layer panel beneath the background color options. The menu items allow you to quickly adjust the layer magnification. **Fit to Project** will adjust the magnification to fit the entire project. **Fit to Layer** will adjust the magnification to the length of the current layer. **Fit to Image** is the maximum magnification. **Fit to Selection** will adjust the magnification to the length of the selected frames. **Fit to Keys** will adjust



The Auto Fit pop-up menu on the Layer panel

the magnification to show the first and last (filter) keys. **Fit to Sound** will adjust magnification to the length of any sound clip that you've loaded.

You also can change the layer magnification by placing your mousepointer over the **Z** button (located beside the **Auto Fit** button) and dragging left (zoom out) or right (zoom in). If you zoom out, you will see more of your layers at one time and the interval corresponding to a frame will become narrower. However, since the size of the frame thumbnails remains constant, not all of them will appear.

USING AUDIO

You can load the audio from AVI, WAV and MOV (Quicktime) formats into an Aura project. Simply click on the pop-up menu button (downward-facing arrow) and select **Load Sound**. The audio will play when you play your project. (Aura also lets you load audio from RTV formats.)

Once the file is loaded, a waveform graph will fill the layer bar area. You can use this as a reference for events occurring in the audio file.



The Audio pop-up menu on the Layer panel

If you need to offset the start of a loaded sound, you can simply drag the waveform graph with your mouse. For a more precise adjust, select **Offset** from the pop-up menu. In the pop-up dialog, enter the offset in seconds. Activating **Lock** in the pop-up menu prevents you from being able to drag the waveform with your mouse.

If you activate the **Audio Jog** option on the pop-up menu, you can hear the sound as you shuttle through your project by dragging your mouse pointer over the global timeline. This option offers you a few menu items: **None** if you prefer not to hear audio, **Scrub Only** to hear audio only when you scrub the file, and **Always** to hear audio when you scrub or jog.

To clear a loaded sound, select **Delete Sound** from the pop-up menu. This will remove the sound from your project, but not affect the actual file on your hard drive.



NOTE Audio is exported with the AVI, and QuickTime file formats. Aura also exports audio with the RTV file format.



NOTE If your audio device is not free, this may prevent you from being able to load a sound file. Also, Aura may continue to use the audio device until you exit, even after the sound file is deleted from the project.

Notes:



Chapter 8: Filters

Filters carry out complex operations such as creating relief, smoothing, and transparency as a function of the color, on one or more images. There are two types of Aura filters: integrated (built-in) and external (plug-ins). With the Aura plug-in architecture, you can add new filters, new functions, and new tools to your software. A number of plug-ins are supplied with Aura.

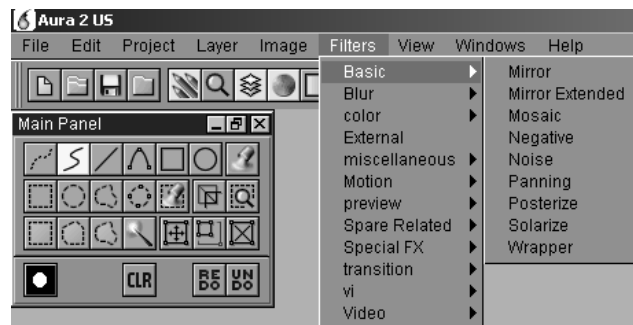
INSTALLING AND REMOVING PLUG-INS

All plug-in files stored in the Aura Plugins directory are automatically installed when you start the program. Plug-in files are grouped by type by placing them in subdirectories of the Plugins directory. To add new plug-ins, simply copy them into a suitable subdirectory. To remove a plug-in, move the appropriate file out of the Plugins directory or delete it.

APPLYING FILTERS

You access Aura filters from the **Filters** menu. Initially, you will see the groups of filter types. Just navigate down from the group to select the desired filter. Generally, a new panel will appear when you select a filter.

You apply a filter to the current image or to selected frames in the current layer by clicking the **Apply**



Aura Filters menu

Filter button on the filter panel. Most filters include a preview window that previews the effect of the filter on a thumbnail image, if the **Preview** option on the panel is active. This display changes as you modify the filter settings. If the preview doesn't update, click the preview window. A few filters use the project window for previewing.



NOTE With most filters, you are allowed to have only one panel open at any one time. Selecting a different filter will close the previous filter's panel before opening the new one.



NOTE To apply a filter to only a portion of your image, use a selection function or use a stencil layer to indicate a target area.

ANIMATED FILTERS

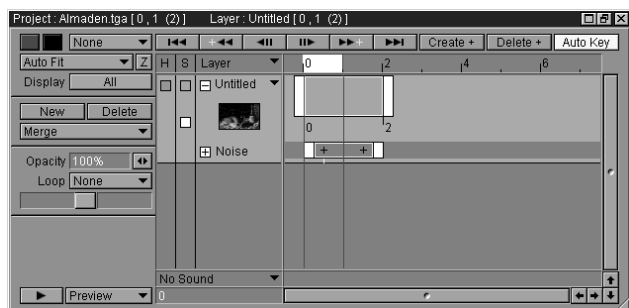
You can keyframe many of the filters. That is, you can set different values at different frames. Aura will automatically compute any needed values between the *keyed* frames.



NOTE Not all filters may be keyframed. Filters are keyframable if they have a variable. If you select a keyframable filter, it shows up in the local timeline of the currently selected layer.

Keyframable filters are marked with the icon  in this manual.

There are several buttons you should be aware of on the Layer panel.



The Create+, Delete+ and Auto Key buttons on the Layer panel

Clicking the **Create+** button creates a key at the current frame for all of the parameters of the currently active filter. Clicking the **Delete+** button deletes all selected keys.

The **Auto Key** button controls the Auto create key mode. Generally, numerically changing a parameter will automatically create a key for that parameter only.



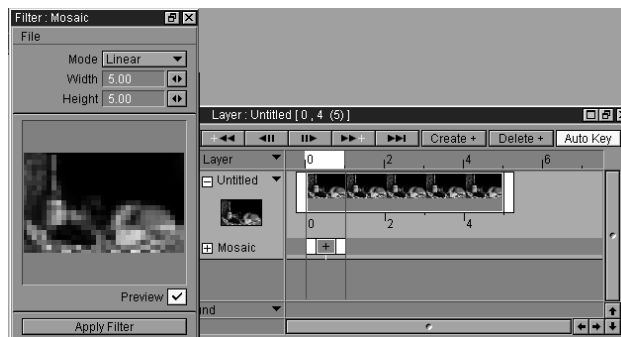
HINT We generally recommend that you keep the Auto Key active.

To select a key:

Click the plus sign on the keyframe bar. If you click the top-most plus sign, all of the parameter keys for that frame will be selected. You can select multiple keys in different frames by holding your Shift key.

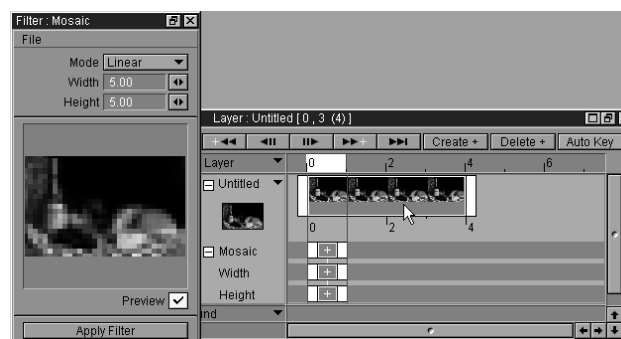
To Keyframe a Filter:

1. Select the desired filter from the **Filters** menu. Here, we selected the Mosaic filter. Notice that the filter name appears in the layers list beneath the current layer and at frame 0, there is a *keyframe bar* that looks like a plus sign (+) between two white handles.



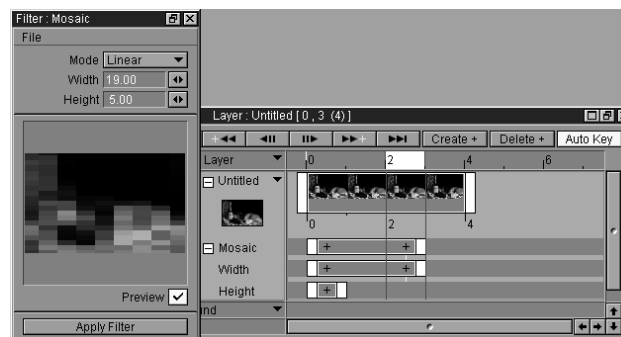
Mosaic filter with a keyframe bar in the Layers panel

2. Click on the plus sign (+) to the left of the filter name, Mosaic, to expand the keyframe bars. Initially, *keys* (short for keyframes) are created at frame 0 using the filter's default values for each of the filter's animatable parameters.



Mosaic filter with expanded keyframe bars for default values

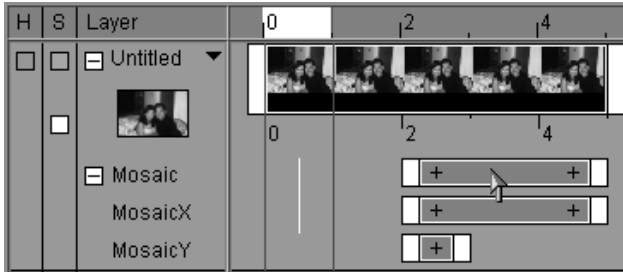
3. By selecting a different current frame and then adjusting any of the filter's parameters, you create additional keys, but for only the changed parameters. (Note that **Auto Key** is active.) Here, we created a new key for only the **Mosaic Width** parameter. Note how the top keyframe bar indicates where a key exists for any of the filter's parameters.



Mosaic filter with a key for Width parameter

4. Like a regular (image) layer bar, you can move a keyframe bar in its entirety by dragging it left or right. If you drag the top keyframe bar, all of the lower bars will move in unison.

You also can drag an individual parameter independently. Notice how the top keyframe bar updates to reflect the new key positions.



Moving the Mosaic filter keyframes

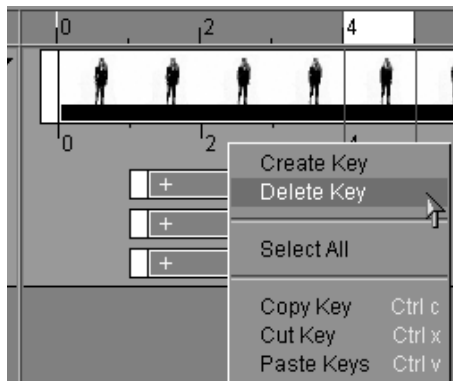
5. It is important to remember that all of this animates only the filter parameters. To actually add the filter, you must apply it. To apply the filter only at a certain frame, select it as the current frame and click the filter's **Apply Filter** button. To apply the filter over a range of frames, select them as usual using the layer's local timeline. The appropriate values at each processed frame will be used.

Subframe Moving

You can drag an entire keyframe bar or individual key with *subframe accuracy*. This allows you to have keys that don't reach the set value exactly at a frame, but rather, at some point in time between frames. To do this, press and hold the Ctrl key after you click your LMB to drag a keyframe bar or individual key.

Keyframe Pop-up Menu

If you right-click over the keyframe bar area a special pop-up menu appears. Selecting **Create Key** will create keys for all parameters at the current frame. **Delete Key** will delete *selected* keys. The **Select All** menu item will select all the keys for all frames.



Right-click the keyframe bar for the pop-up menu

Copy Keys copies all of the selected keys to an internal memory buffer. **Cut Keys** does the same thing, but also deletes them. You can paste the data, starting at the current frame, by choosing Paste Keys.

Clearing a Keyframed Filter

Basically, there is no need to clear a keyframed filter from the Layers panel. It does nothing unless you formally apply it. When you close the filter panel, the filter keyframe bar will disappear. You can, however, clear all of the keys by selecting **Reset** from the **File** menu on the filter's panel. Note that this clears all keys, including the initial frame 0 keys. You also can use Ctrl + R, which is the keyboard shortcut for resetting a filter. To learn more about keyframing filters, refer to Lesson Ten in the Aura content directory.

Keyframe Data

You also can save and load the keyframe data to/from a file from the **File** menu on the filter's panel. Note that the last used filter keys will be retained in the project for future use.

Path Menu

Using the KeyFramer filter, you can create animated envelopes for certain types of parameters, like position, rotation, etc. If you have defined a KeyFramer path, you can use that data to control some filters instead of creating the keys for the filter the normal way. Such filters will have a **Path** menu.



The Panning filter has a Path menu

The filter's parameters that use the KeyFramer data will be listed in the **Path** menu. Select the KeyFramer path you wish to use. You can assign all (appropriate) parameters to the same path using the **All Keys** item.

BASIC FILTERS

Mirror

The Mirror filter allows you to flip the image horizontally, vertically or both.

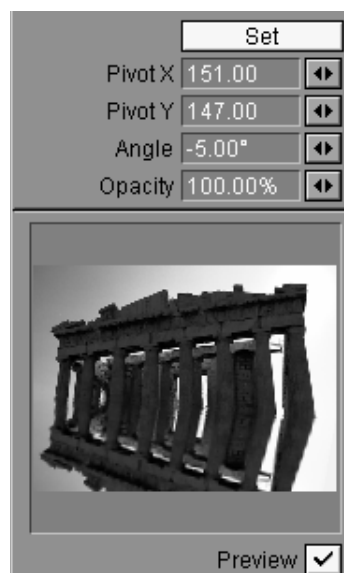


Mirror panel with preview

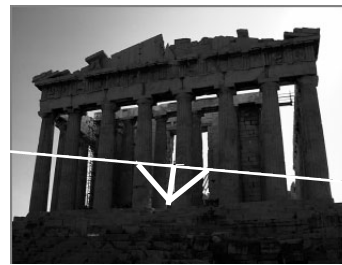


NOTE Although you also can flip the current image (without using a filter) with the [(horizontal flip) and] (vertical flip) keys, those function only on the current image. The Mirror filter also can work on a range of selected frames in a layer.

Key Mirror Extended



Mirror Extended panel



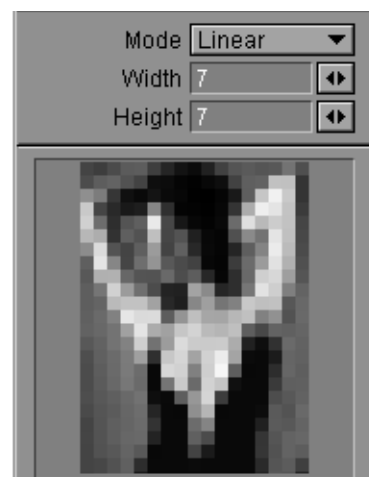
The reflecting line for Mirror Extended

The Mirror Extended filter produces a reflected image similar to when an object is reflected in a lake.

The **Set** button lets you graphically set the position of the reflecting line over which Aura generates the mirror image. The Pivot X and Y fields let you numerically set the horizontal and vertical position of the reflecting line. The **Angle** field indicates the angle of the reflecting line in relation to the picture. To adjust the angle graphically, hold the Ctrl key and rotate the line with your LMB. You can change the opacity of the reflected image from the **Opacity** field.

Key Mosaic

The Mosaic filter produces a *pixelized* effect. The image is replaced by a set of colored macro-pixels of a definable size. Each macro-pixel color comprises the average of the original pixel colors it covers. You can pixelize an image with (**Smooth**) or without a smoothing (**Linear**) effect selected using the **Mode** pop-up menu.



Mosaic panel with preview

The **Width** and **Height** fields set a specific size for the *macro-pixels*. These two values may be different, resulting in rectangular pixels instead of typical squares. As the macro-pixel size increases, the image becomes more undefined, therefore if you want to

retain the basic concept of your image, keep the width and height values fairly low.



NOTE The preview window applies the effect as if it were proportionately the project window. As such, the applied mosaic effect will often be smaller than it appeared in the preview window.

Negative



Negative panel with preview

As its name implies, the Negative filter transforms an image into its negative. The color of each pixel is replaced by its complement (black becomes white, red becomes cyan, blue becomes yellow, etc.). There are no settings for this filter.

Noise



Noise panel with preview

The Noise filter adds randomly dispersed pixels in random directions and distances. **Shift** defines the maximum distance of pixel shift. All pixels are shifted at random by a distance between 0 and this value. **Intensity** defines the percentage of pixels shifted in the image. The amount of the effect increases as this number increases.

Key Panning



Panning panel

The Panning filter works like the Panning tool (Main panel). It moves the contents of the image in a given direction and distance. The image is tiled while panning, so as parts of the image go off one side of the screen, they reappear on the opposite side. Use the Panning filter instead of the Move tool when you need to move a range of (selected) frames in a layer, when you need to shift things a very precise amount, or when you want to animate the effect.



NOTE The panning tool works well with layers that contain brushes or anim brushes with alpha. Use it to move a keyed element or logo brush.

The **Mode** menu lets you choose how to apply the panning operation. **Wrap** repeats the image so that you create a tiling effect. **Shift** offsets the image from its original position.

You can set exact panning parameters by entering the desired pixel values in the **Pan X** and **Pan Y** input fields. You also can set these values graphically by clicking the **Set** panning button. A large crosshair will appear beneath the pointer when you are over the project window. Drag your mouse button and an elastic line will follow your pointer. This line shows the direction and distance of the shift. The **Pan X** and **Pan Y** values automatically update as you move the pointer and the preview window will also change accordingly. Release the mouse button when you are satisfied with the applied shift.



NOTE For information on the Path menu, see the Motion filter KeyFramer.

🔑 Posterize



Posterize panel with preview

The Posterize filter lets you set the number of tonal levels for each color channel in an image and then maps pixels to the closest matching level. A setting of 2, for example, yields six colors, two for each of the RGB color channels.

Solarize

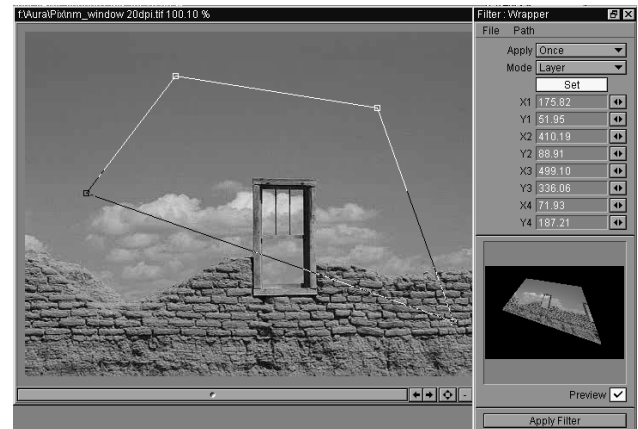


Solarize panel with preview

The Solarize filter takes a negative and a positive of the image and blends them together.

🔑 Wrapper

The Wrapper filter allows you to change the perspective of the current **CustomBrush** or **Layer** – essentially pivoting it in 3D. When you select the **Layer** mode, you affect the current image in the current layer. For the **CustomBrush** mode, you must first either cut out or import an image to serve as the



Left Side: Setting the XYcoordinates visually

Right Side: Wrapper panel with preview

custom brush. Then, when you apply the Wrapper filter, the brush is pasted down into the image.

You can numerically set the four corners of the new perspective area using the four XY coordinate pairs, but it is simpler to set them visually by clicking the **Set** button. You also might want to choose **Reset** from the File menu to make sure the shape begins with each point in one of the four corners. Then you simply drag each point from the corner to form the new perspective shape. Points can even be dragged off the image area. You can reposition the entire outline by holding the Ctrl key and dragging with your LMB. Holding the Ctrl key and dragging with your RMB will scale the outline.

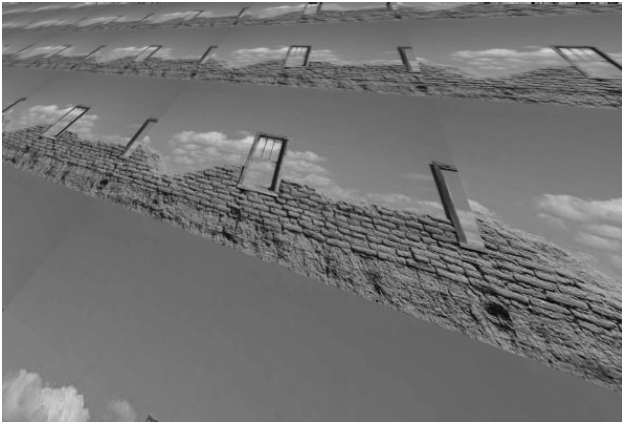
As such, you cannot drag a corner to where the image would, in theory, wrap over on itself. If you attempt to do this, a large red X will appear on the panel preview.

Changing the shape of your layer or custom brush will create the illusion of perspective. If visible, you also can drag the vanishing points to alter the perspective shape.



NOTE See also the discussion on vanishing points for the Wrap tool in Chapter 3.

If the **Apply** option is set to **Once**, the default setting, Aura applies the layer or custom brush only once. Setting this pop-up menu to **Fill** will tile the image.



Apply set to Fill for the Wrapper Filter

If you use the **CustomBrush** mode with an anim-brush and you selected multiple frames, each brush image is applied to one of the selected frames in the layer.



NOTE You can use the Wrapper tool to composite a picture-in-picture at perspective, or use it in conjunction with the Pixel Tracker to paste brushes or video onto moving video. See Lesson Ten in the Tutorials folder in the Aura content directory.

BLUR FILTERS

Blur



Blur panel with preview

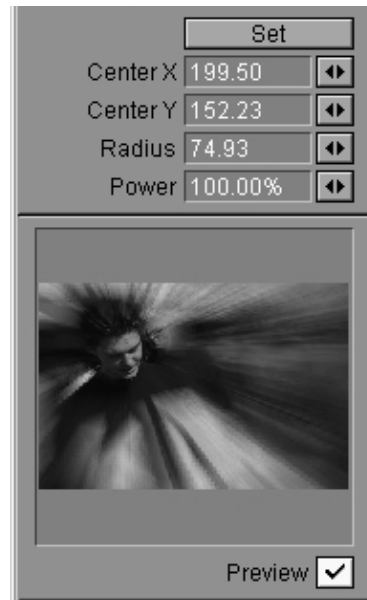
The Blur filter applies a smoothing blur effect to the image. The amount of this smoothing is variable and you can apply it to the **Image** or just its **Opacity**. When applied to the **Opacity**, blurring mostly affects element outlines.

Blur represents the power of the blurring, which increases as this value increases.



HINT If you blur the opacity of brushes and animbrushes you can create a soft edge or remove jagged edges.

Center Blur

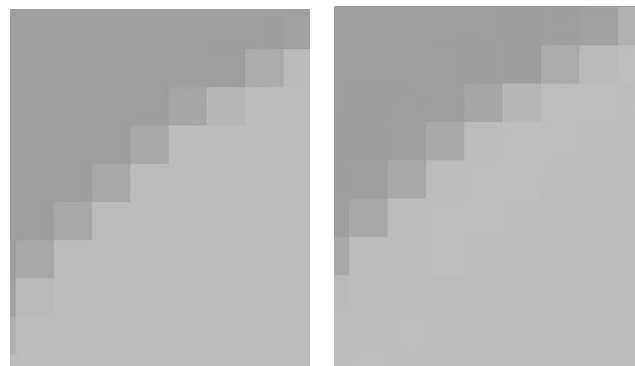


Center blur panel with preview

The Center Blur filter creates a zooming affect by sweeping a motion blur over areas outside of a defined focal point.

The **Center X** and **Center Y** fields let you set the coordinates in pixels for the center of the blur. The **Radius** determines the image area that remains unaffected by the blur. **Power** sets the amount of motion blur in percent.

ChromaBlur



Without Chroma Blur

With Chroma Blur

This filter is provided to assist with difficult chromakeying tasks associated with some digital video sources. **Blur** represents the radius of the blur applied.

Video recorded in certain DV formats (25 Mbps variants like miniDV, DVCAM, and DVCPro) runs into some issues when chromakeyed. The problem stems from the 4:1:1 (NTSC) or 4:2:0 (PAL) digital sampling used by these formats.

Simply stated, the black and white tonal values in DV imagery are much better resolved than the corresponding color values are. The eye is relatively forgiving of this compromise. Reasonable sharpness in the luminance channel suffices to convince us that the image is sharp, even though the color channels are heavily pixilated due to the lower sampling used.

Chromakeying, however, depends on chrominance values in determining transparency; and DV's chrominance values are decidedly "blocky." A slight blur applied solely to the chrominance channels reduces the apparent "blockiness" of the color values, while retaining the sharpness of the underlying luminance values. This can produce a much better key.

🔑 Crazy Blur



Crazy Blur panel with Impress option previewed

The Crazy Blur filter combines blurring with special processing effects. Use the **Mode** pop-up menu to choose the desired effect. Below the Mode menu, you enter the range in pixels for the radius of the Crazy Blur effect in the Radius field. A lower radius produces a less pronounced affect.

🔑 Directional Blur



Directional Blur filter

The Direction Blur filter adds a motion blur to an image, which makes the blur effect dynamic.

The **Power** field sets the length of the motion blur in pixels. The higher the number in this field, the more blur is applied to the image. The **Direction** field sets the angle of the motion blur, which is the direction of the blur.

🔑 Gaussian Blur



Gaussian Blur panel with preview

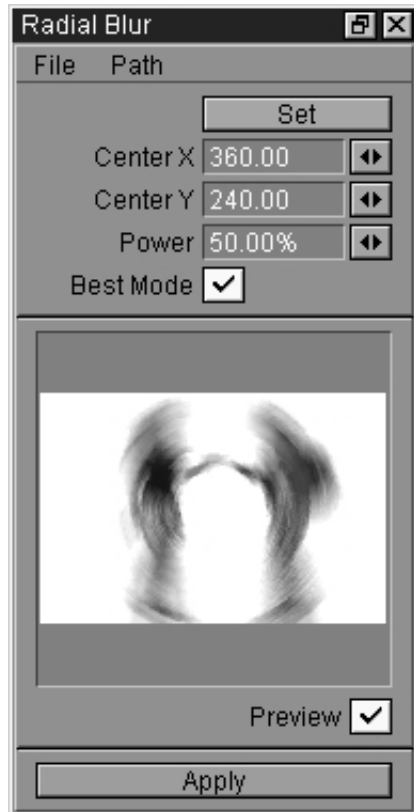
The Gaussian Blur filter blurs the image using a different algorithm than the Blur filter. With Gaussian Blur, the pixels are weighted unevenly in each processed sample and decrease from the center to

edges according to a bell-shaped curve called gaussian. Gaussian Blur tends to provide a softer blur than the Blur filter.



NOTE Gaussian Blur works best for keyframing a blur because it uses floating point values for smoother transition over time.

Key Radial Blur



Radial Blur filter

The Radial Blur filter creates an image blur similar to the effect of a camera banking or tilting around a focal point.

The **Center X** and **Center Y** fields let you specify the pixel coordinates for the blur; these coordinates are the center around which the blur and rotation occurs. The **Power** setting determines the percentage of radial blur to apply to the image. A lower percentage applies a weaker blur and therefore tilts the image less, and higher percentage will blur and tilt the image more. **Best Mode** displays the blur using more system resources, which gives you a better quality blur. You can toggle this option on or off.

COLOR FILTERS

Key Black and White



When you choose the **Black and White** filter, you convert a color image to a grayscale image. You must set three parameters to achieve the effect based on the following equation:

$$Y=R*\text{CoefR} + G*\text{CoefG} + B*\text{CoefB}.$$

You enter values in the fields for Red, Green, Blue. To see your changes as you make them, click on the **Preview** button. You can see your change to each channel in the project window.

Key Color Adjust

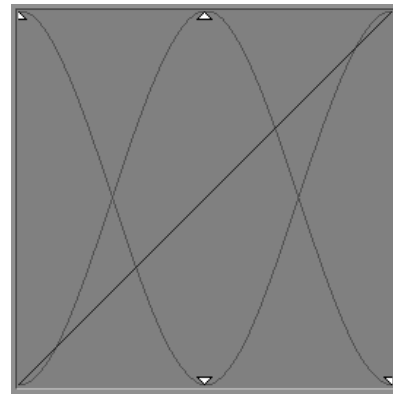
Use the Color Adjust filter to adjust the **Brightness**, **Contrast**, **Saturation** and **Gamma** for an image. With this filter, Aura applies the preview feedback in your project window.

The **Brightness** field measures the amount of white in your image and will accept positive or negative values – positive values add more white to your image, while negative values will add more black.

Contrast refers to the difference in brightness between the lightest and darkest areas of your image as measured by levels of grey. Positive values produce greater contrast by removing greys and intermediate colors; negative values produce less contrast by adding levels of grey.

Saturation refers to the intensity of color for each pixel. Positive values produce greater color intensity by removing grey so that colors reach their purest hues, while negative values tend toward greyscale as more color is removed.

The **Gamma** setting adjusts the colors in the image based on a curve that ranges between .01 and 5.0. Values below 1.0 darken the dark and midtone areas of the image while increasing contrast. Values above 1.0 lighten the light and midtone areas of the image while increasing contrast.

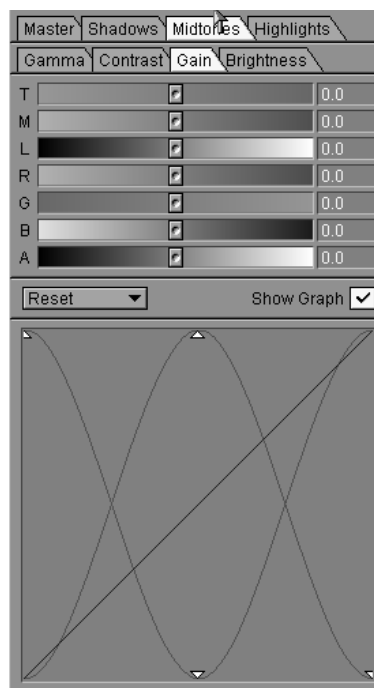


The Color correction graph



Color Adjust from left to right:
Default; Brightness -25%; Brightness 50%; Contrast 50%; Contrast -75%; Gamma 3.00; Gamma 0.30.

🔑 Color Correction



The Color Correction filter allows you to adjust colors based on *brightness regions*. There are three *regions*:

Highlights, Midtones and **Shadows**. These are selected using the tabs at the top of the panel. **Master** is a global setting encompassing all regions. You might think of these as defining *where* the adjustments will be made. The middle portion of the panel contains a series of sliders. These add or subtract the corresponding color component: **Temperature**, **Magenta**, **Luminosity**, **Red**, **Green**, **Blue** and **Alpha** channel.

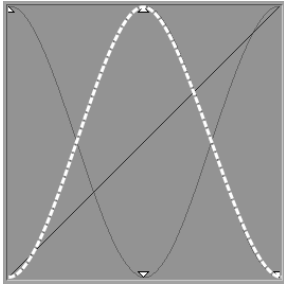
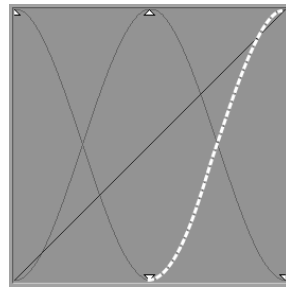
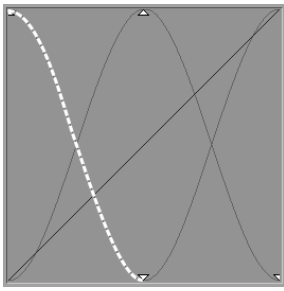
As you adjust any of the color components, you will see corresponding color curves appear that reflect your settings. Note that there is only a red, green, blue and alpha adjustment curve.

Temperature, **Magenta**, **Luminosity** use the appropriate combination of these when adjusted.

Let's jump down to the graph. The horizontal axis of the graph corresponds to the original brightness values of the pixels and the vertical corresponds to the new brightness values. The default diagonal line means no pixels have been changed to new values.

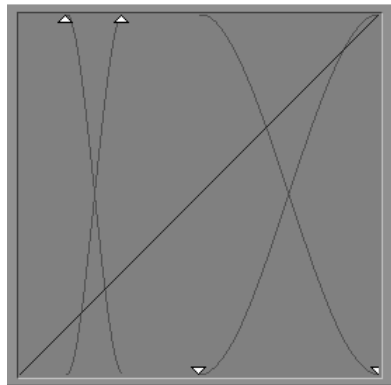
Also on the graph, there are three distinct curves that correspond to the three regions. Essentially, the curves define what area is affected when you select one of the regions. The Shadow region corresponds to the curve that starts in the top-left corner and descends to the bottom-middle of the graph. The Highlights region starts at the bottom-middle and ascends up to the top-right of the graph. The Midtone curve is overlayed on top and begins in the lower-left, ascends to the top-middle of the graph and then ends in the lower-right.

You can redefine the curves by dragging any of the four white triangles. This not only allows you to reposition the curves, but also to change their shape. The shape and position of the curve determines how the adjusted color parameter is applied to the selected region. Where the curve is high, a greater amount of change will occur. Where the curve is low, less change will occur.



Above Left: Shadow curve.
Above Right: Highlights curve.
Left: Midtones curve

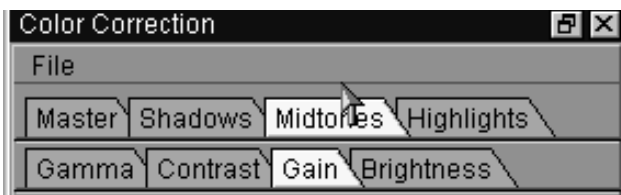
Let's move back to the second row of tabs. The **Gamma**, **Contrast**, **Gain** and **Brightness** tabs determine how the color component affects the pixels in the selected region.



Drag the white triangles on the Color Correction graph to redefine curves

Using the **Gamma** or **Brightness** of the pixels will achieve similar results. The difference will occur at the ends of the region. **Brightness** uniformly increases/decreases the color component over the entire region. **Gamma** tends to keep upper and lower values undisturbed.

Using the **Contrast** of the pixels increases the color component for brighter pixels and decreases it

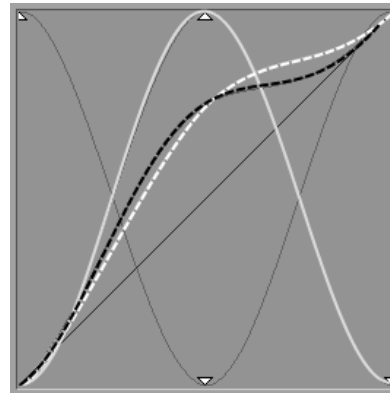


Gamma, Contrast, Gain and Brightness tabs

for darker ones. **Gain** is similar, but fades the effect off at the ends. This will minimize the pixels that get pegged at the maximum and minimum possible values.

Below is a comparison of Gamma (dotted black line) and Brightness (dotted white line) both increased (for different color components) using the default Midtones curve (solid gray). Notice how both peak at the height of the Midtones curve. The Brightness line is applied purely based on the Midtones curve. The Gamma line, however, falls off at a different rate.

It is important to note that each color component can be set differently for **Gamma**, **Contrast**, **Gain** and **Brightness**. Moreover, each region can have its own combination of settings.



Comparison of Gamma and Brightness with the default Midtones curve



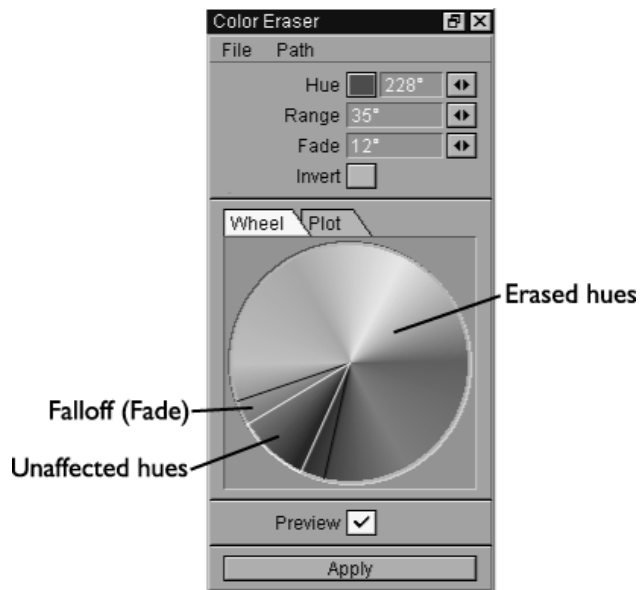
NOTE All color corrections are in effect regardless of what is displayed on the current set of sliders.

On the **Reset** pop-up menu, choose **Reset Ranges** to return all of the region curves to their default state. **Reset Current** will restore the default settings for only the currently displayed color components. **Reset All** resets all panel settings to their default state.

The **Preview** option will let you use the project window to preview your settings.

Key Color Eraser

Use the Color Eraser filter to remove all but the defined color hues from an image. The **Hue** color determines the base color that will be left in. The easiest way to set this is to use the color selection button on the panel and select the color from the image itself. However, you can set this value numerically as an angle in degrees around the displayed color wheel, with zero degrees corresponding to three o'clock.

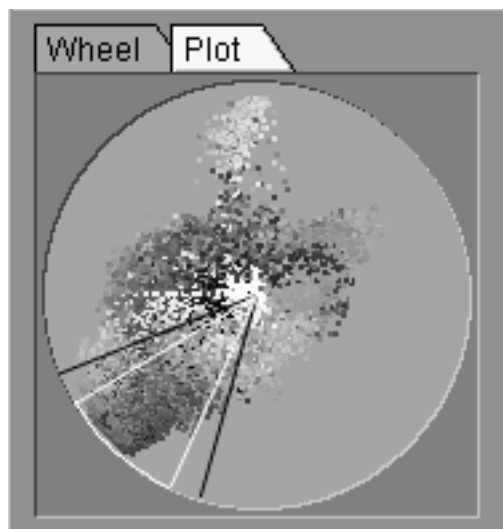


The **Range** expands the defined range by the number of degrees set. As you adjust this value, you will see the white outlined pie shape expand or contract. All of the hues within this area will be left alone. The **Fade** settings set a falloff range outside of the **Range** to give you a smooth transition. This setting is indicated by black lines.

You can adjust the **Hue** value by dragging the pie-shaped outline with your mouse.

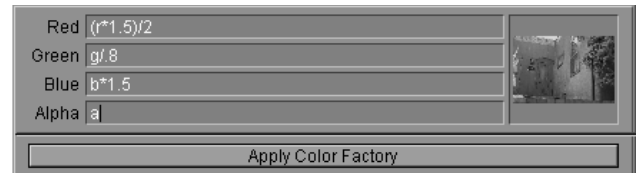
You may reverse the effect of your settings by activating the **Invert** option.

The Plot tab shows the color wheel with only the image's colors mapped on it. This often will make it much easier to define your area, particularly with photographs.



Plot tab with image colors only

Color Factory



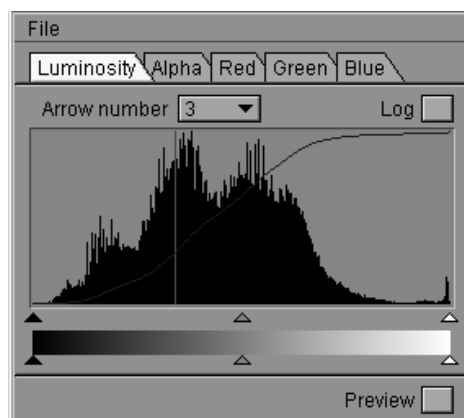
Color Factory panel

Use the Color Factory filter to mathematically modify the red, green, blue and alpha color channels of the selected images. To set this filter, enter the formula to be carried out on each component in the appropriate field.

The arithmetic operators + (addition), - (subtraction), * (multiplication), and / (division) are supported. You also can use parentheses to define operational priority. If you do not use parentheses, operations are carried out from left to right. The following variables, which are case sensitive, also may be used:

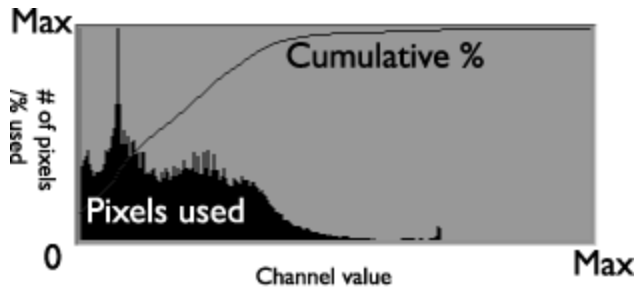
r	value of the red pixel component
g	value of the green pixel component
b	value of the blue pixel component
a	value of the alpha pixel component
x	x pixel coordinate
y	y pixel coordinate
l	image width
h	image height

Color Histogram



Color Histogram panel

The Color Histogram modifies an image by changing the distribution of color, luminosity or opacity in the image. This filter can affect different components of the image (red, green, blue, luminosity or opacity). For example, you can use this filter to reduce the global opacity of an image to make it more transparent, or you can increase its global luminosity to make it lighter.



The five tabs on the panel determine which channel will be modified: Luminosity, Alpha (i.e., opacity), Red, Green or Blue.

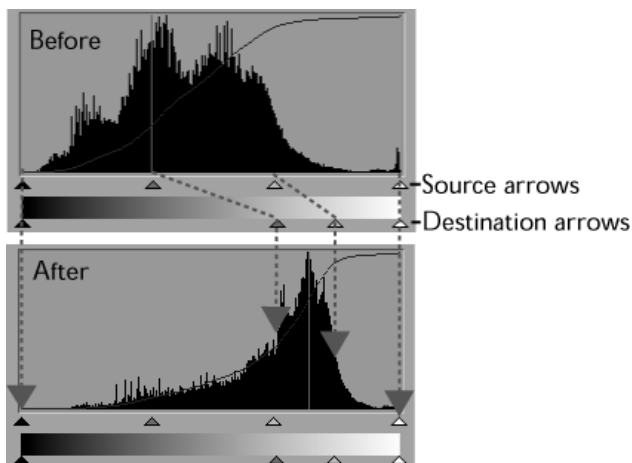
The distribution graph shows two different pieces of information: on the black column graph, you see the relative number of pixels with all the possible values of the selected channel, while on the blue line graph you see the cumulative percentage of pixels using the channel. Channel values (e.g., red=0 to 255) are shown along the horizontal axis. The relative number of pixels matching that channel value (black column graph) and percent used (blue line graph) is shown on the vertical axis of the graph. A red vertical line marks the position of the highest concentration.

The **Log** option increases the amplitude of the black graph for non-zero values.

These graphs will give you information on the color, luminosity and opacity that make up an image, which can be difficult to determine by just looking at it. For example, the luminosity values for a bright image on the black graph would be skewed toward the right, that is, towards the maximum luminosity values. A dark image would be skewed toward the left. An image that had a lot of dark reds would have a black graph skewed towards the left for the Red component. If an image had no blues, the black graph for the Blue component would be flat and low.

The Source and Destination Arrows

The source and destination arrows allow you to redistribute the component values. In essence, warp the values to a new shape. Essentially, the graph will



Before and After adjusting Destination arrows on the Histogram

maintain its peaks and valleys; however, you can reposition them by expanding and contracting ranges you specify.

The **Arrow number** pop-up menu lets you set the number of arrows available for editing. More arrows give you greater control over how the values are redistributed.

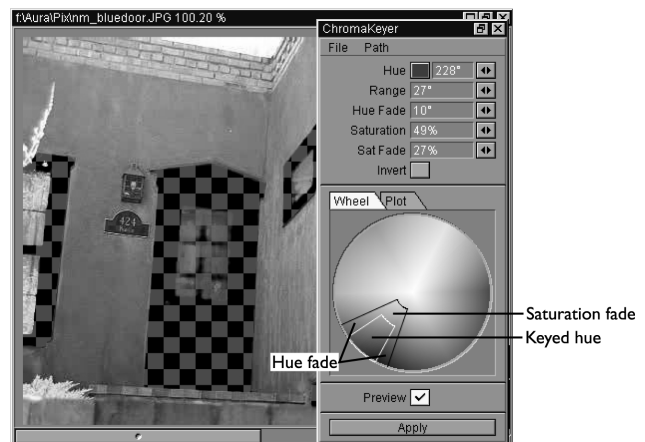
The upper set of arrows represent key positions in the graph that you define. The lower set represent where you want those positions to migrate to. Areas between are interpolated based on the relative neighboring slider positions. If matching top and bottom arrows are at the same position, no change occurs at that point. However, their position will affect the interpolation that occurs between their neighboring arrows.

Slide the arrows by dragging them with the mouse pointer. You also can click on an arrow with your RMB and a question mark appears beside the pointer. Drag your mouse around the image. The value of the pixel under the pointer, as it relates to the selected channel, determines the arrow's position. A green line appears in the graph indicating the pixel channel value. Release the mouse button to position the arrow.

Key Chroma Keyer

The Chroma Keyer filter uses pixel chrominance (i.e., color) values to alter the transparency of parts of an image. This is often called *chroma keying*. That is, certain color hues are *keyed* out of the picture, such as when a weatherman appears over computer graphics. Aura's filter modifies an image's opacity by determining the difference between each pixel and a chosen reference color hue. This type of operation is often used with a blue background, called a *blue-screen*.

The easiest way to set the **Hue** to be keyed out is to use the color selection button on the panel and select the color from the image itself. However, you also can set this value numerically as an angle in degrees around the displayed color wheel, with zero degrees corresponding to three o'clock.



Chroma Keyer with Hue keyed out of door.

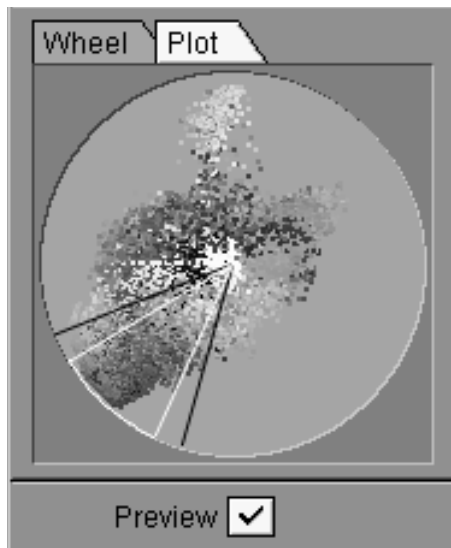
The **Range** expands the defined range by the number of degrees set. As you adjust this value, you will see the width of the white outlined pie shape expand or contract. All of the hues within this area will be keyed out. The **Hue Fade** setting sets a falloff range outside of the **Range** to give you a smooth transition between keyed and non-keyed areas. This is indicated by black lines.

Saturation defines a saturation limit above which color hues become completely transparent. (Saturation is the amount of the color hue.) If the value is 100, only pure hues become transparent. If the value is 0, all hues between the pure hue and the completely desaturated hue become transparent. This setting is depicted in the color wheel by extending the white arc towards the center as the setting is decreased.

Saturation Fade defines a transition area (i.e., fall off). Saturation above this limit becomes partially or completely transparent. This value is between 0 and the **Saturation** value. This setting is depicted in the spectrum by moving the point of the pie piece outward toward the edge of the spectrum.

You can adjust the **Hue** value with your mouse by dragging the pie-shaped outline with your mouse.

You may reverse the effect of your settings by activating the **Invert** option.

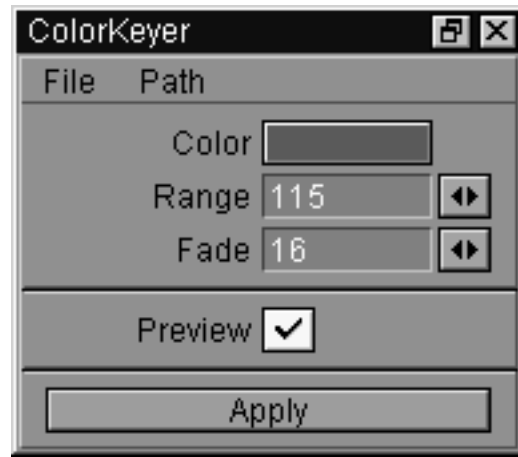


Plot tab with image colors only

The Plot tab shows the color wheel with only the image's colors mapped on it. This will often make it much easier to define your area, particularly with photographs.

🔑 ColorKeyer

While the Chroma keyer filter mimics the traditional way colors are keyed out, this filter uses a more computer-like method. Instead of using color hues, it uses pixel RGB color ranges to alter the transparency of



ColorKeyer panel

parts of an image. Pixel opacity is determined by its distance from a selected reference color.

To choose the reference color, click the **Color** button. This operates just like any other Aura color selector operation.

If the red, green, or blue value of a color differs from the RGB value of the reference color by no more than the **Range** value, it is considered completely transparent. So, if the reference RGB **Color** was 200, 100, 100 and the **Range** was 10, RGB: 190, 105, 95, RGB: 209, 105, 102, etc. would be transparent.

Fade defines a transition area between fully transparent and fully opaque colors. This avoids abrupt changes in transparency. Totally transparent pixel RGB values that are within the **Fade** value are proportionately transparent. A pixel is opaque when the difference between its color and the reference color exceeds **Range** plus **Fade**.

🔑 CrossKeyer



CrossKeyer panel

The CrossKeyer is similar to the ColorKeyer but it allows you to pick which color to keep or drop.



NOTE Setting up the CrossKeyer in VT [3] is different from the Aura procedure.

To use CrossKeyer:

1. First, click on the **Keep** button and then use the mouse to drag around an area you want to keep.



Select an area to keep

2. Then click on the **Drop** button to drag around the colors you want to drop.



Select colors to drop

3. Select the **Apply** button to apply the filter. Here's the result:



After applying the CrossKeyer filter

The **Mix** setting defines how much of the adjacent colors are selected using a range between 0.00 to 1.00. As you approach 1.00, the CrossKeyer captures more colors to add to the dropped region.

The **Edge** setting defines the softness of the selection area. Higher values will give you more sharply defined edges between areas that are opaque or transparent, while lower values will apply a softer transition between edges.

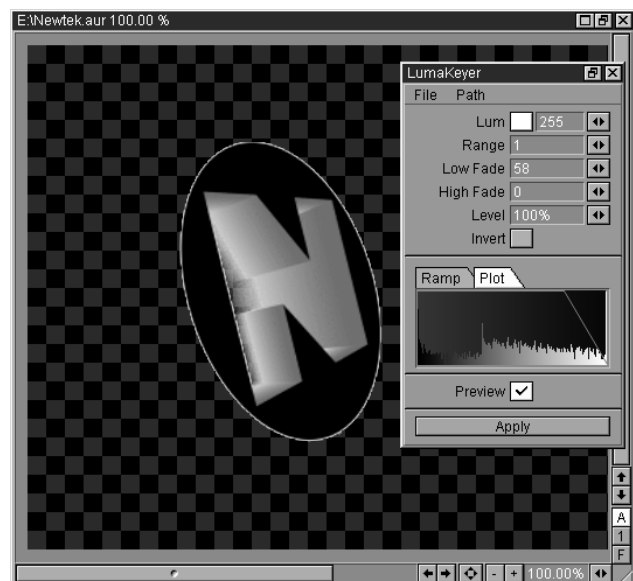
By clicking **Learn** you tell Aura to remember the colors so it can apply the filter over a series of frames.



NOTE You must click **Learn** before you click **Apply**.

🔑 LumaKeyer

Another traditional method for keying out colors is *luma keying*, instead of using color hues (chroma keying), this filter uses the pixel luminosity (i.e., brightness) to affect the transparency of parts of the image. It modifies pixel opacity as a function of how close pixels are to a reference luminance that you choose.



LumaKeyer filter set to key out Luminance values of 255 with a low fade falloff

On the Ramp tab, the black to white gradient represents the luminosity spectrum. The red line indicates the keyed values. The vertical position of the line is the amount of transparency. If the line is at the bottom, pixels with the corresponding luminosity values are fully transparent. If the line is at the top, the opposite is true.

You can choose the base reference luminosity by clicking the **Lum** color picker button. A question mark appears adjacent to the pointer. Choose a point on your image that represents the general area to be keyed. You also can edit the value directly or drag your mouse over the spectrum. The maximum possible **Lum** value is 255.

The **Range** value sets a range of values around the **Lum** setting. Depending on the Lum setting, you

will be limited to possible values. That is, no part of the defined range can go past 255 or 0 luminosity.

The **Low Fade** sets up a falloff range on the low side of the range. The **High Fade** sets up a falloff range on the high side of the range. You will see this as an angling of the red line.

The **Level** value sets the intensity of the transparency.

You may reverse the effect of your settings by activating the **Invert** option.

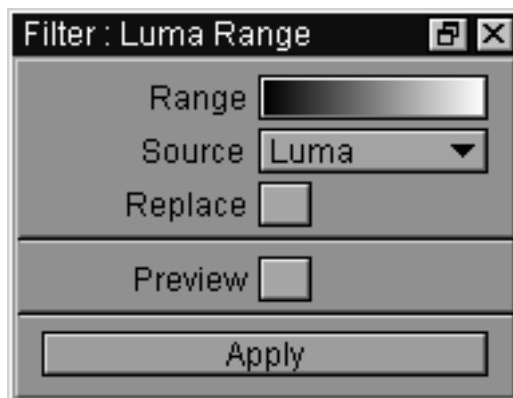
The **Plot** tab shows the luminosity with only the image's values mapped on it. This will often make it much easier to define your area, particularly with photographs.



Plot tab on the LumaKeyer shows luminance values in an image

Luma Range

The Luma Range filter applies a color in a defined color range to each pixel in the image. When **Source** is set to **Luma**, the luminosity alone determines the color applied. Darker pixels are assigned the colors on the left side of the color range, and lighter pixels are assigned the colors on the right side of the range. You also can limit the selection to the luminosity of just one of the three color channels: **Red**, **Green** or **Blue**.



Luma Range panel

Setting **Source** to **Alpha** uses the opacity of the pixels in the image as a basis for assigning colors. As a result, images like scanned images will be a solid color because there is no variation in opacity.

Normally, the filter respects transparent areas in the image. Activating **Replace** overrides this behavior, and replaces all colors regardless of opacity.

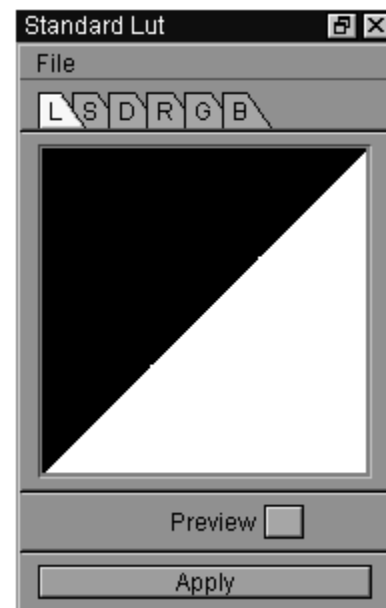
The color range used by the filter can be established in two ways. By default, it uses your current A and B colors. You can change these, then click the range bar on the panel to update the range in the filter panel. The left-most color will be the A color and the right most will be the B color, with a smooth gradient in between. Alternatively, if you activate Aura's Gradient tool and set a gradient there, clicking on the filters range bar will be updated to display the new gradient.



HINT You can get effects like sepia tone images by using a color range that goes dark to light using similar tones. Negative effects result when the range goes from light to dark.

Standard LUT

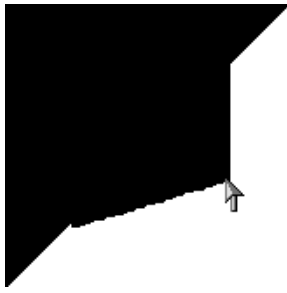
The Standard LUT (look-up table) filter applies a transformation to a given component of each pixel in the image. You can modify the **Luminosity**, **Saturation**, opacity (**D**), **Red**, **Green** or **Blue** of each pixel using a curve.



Standard LUT panel

The curves map the conversion of one set of values to another. Any point along the curve can be defined by an x and y coordinate. A point's coordinate along the horizontal (x) axis indicates the original value. Its coordinate along the vertical (y) axis indicates the converted value. A straight diagonal line from the bottom-left corner to the top-right would indicate no change.

Using the LMB, you can literally draw the curve by clicking on the graph and then dragging the pointer. The RMB is used to modify the curve in a smoother fashion. As you drag the pointer, the curve becomes a bendable spline curve that follows the pointer location.

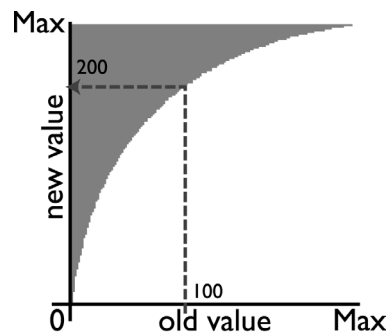


Left: Editing curve using LMB



Right: Editing curve using RMB

The example curve below illustrates how a value of 100 can be converted into 200. All other (old) values are converted similarly based on the curve and corresponding new values.



Here are some example curves:

When applied to luminosity, the curve below makes the image lighter while maintaining the purity of blacks and whites. Applied to saturation, it reinforces colors.



Stronger curve

When applied to luminosity, the curve below reinforces image contrasts. Very dark colors become black (step at bottom left) and very light colors become white (step at top right). Other colors are distributed between these two extremes.



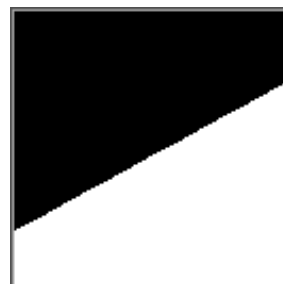
More Contrast curve

When applied to luminosity, the curve below maximizes image contrasts: everything to the left of the vertical line becomes black and everything else becomes white. This curve is an extreme case of the more-contrast curve. The image is composed of pure colors only, namely white, black, red, green, blue, cyan, magenta, yellow. All grays and oranges have disappeared. You can vary the effects by moving the vertical line towards the right or left.



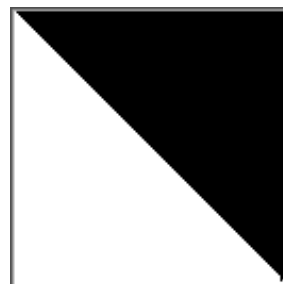
All or Nothing curve

When applied to luminosity, the curve below reduces image contrasts. Dark colors become lighter and light colors become darker, while intermediate colors remain more or less intact. This curve should be compared with the first example, the stronger curve, in which intermediate colors were modified a great deal, whereas dark and light colors were not changed very much. It is also symmetrical about the diagonal axis with the more-contrast curve.



Less contrast curve

When applied to luminosity, the curve below produces a negative of the image.



Inversion curve

When applied to luminosity, the curve below transforms the image into *false colors*. Some of the colors become negative, and for other colors the contrast is enhanced.



Bizarre curve



HINT You can create a **grayscale-looking** image by dragging the right mouse button past the bottom-right corner, essentially filling the saturation curve window with black. The image will still be an RGB image, however.

EXTERNAL FILTER

Aura is compatible with most Adobe® Photoshop® 5.5 plug-in filters. (Aura is not compatible with Photoshop 6 filters.)

To install Adobe® Photoshop® plug-in filters:

1. Make sure the plugin.dll file is located in your system directory (i.e., C:\Windows, C:\Winnt, etc.). If it isn't, locate it (it is part of Photoshop) and copy it to your system directory.
2. Run Aura using a configuration file other than the default. The Photoshop plug-in filter information must be saved to an Aura configuration file and since the default cannot be altered, none of the Photoshop plug-in information will be saved.
3. Choose **Filters > External**
4. Click **Select Directory** from the dialog box that appears.
5. Use the file requester to navigate to your Photoshop\Plugins subdirectory. There should be several files with a file extension of .8BF.
6. Select one .8BF file. (It doesn't matter which.)
7. Click the **OK** button.
8. Quit Aura and make sure the **Save this configuration** option is active on the Quit panel.
9. Restart Aura using the same configuration file. All of the Adobe Photoshop plug-in filters will be added to the Aura **Filters** menu under **External Filters**.



NOTE Some filters may not operate properly outside of the Photoshop environment.



NOTE Only Photoshop plug-in filters will be available. You will not be able to access built-in filters.

You can apply Adobe Photoshop plug-in filters – like any other Aura filter – to the current image or selected frames in a layer.

MISCELLANEOUS FILTERS

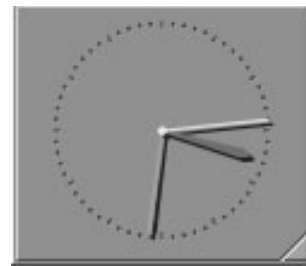
Calculator



The Aura Calculator

The Calculator plug-in displays a small calculator in the Aura interface. You can use it by clicking on the buttons in its menu, or by pressing the keys in the numeric keypad.

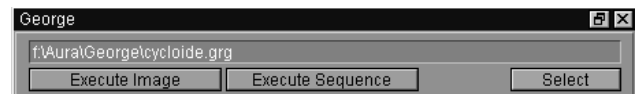
Clock



The Aura Clock

The Clock plug-in displays a small analog clock in the Aura interface. The time shown on the clockface is determined by your system settings.

George



The dialog box with path to a George program

The George plug-in lets you execute George programs that use the None launching mode. Specify the George program by either typing its path and filename in the input field or use the Select option from the dialog box's pop-up menu. Clicking **Execute Image** will run the program on the current image. **Execute sequence** will run the program on selected frames in a layer.

Wallpaper

When you apply the Wallpaper filter and toggle to your system interface, you will see that you have plopped the current Aura image in the middle of your screen. This wallpaper is temporary and when you reboot your system, your original wallpaper reappears. You also can remove the Aura wallpaper through your system control panel without rebooting.

MOTION FILTERS

KeyFramer

Use KeyFramer to create brush motion paths that can be repeated and edited. You accomplish this by setting the position, rotation and other settings of a brush at key points in time, called keyframes. (The filter automatically computes the appropriate in-between states for the settings, as needed.) For example, suppose you want to move a brush from the middle of the screen to one of the corners, and then return to the initial position. You only need to create three keyframes: one for the initial position of the brush, one for the brush in the corner of the screen, and the third for the final position of the brush.

To use a path, select your drawing tool and related settings, and just apply the path. It will be as if you drew that exact path with your mouse or drawing tablet. Use it on a custom brush to fly it around the screen, including 3D-like rotational changes.

You also have the ability to edit the path and tweak it as much as you want. You can even add brush changes with your mouse, normally only possible if you are using a tablet.

There are three ways to create the motion paths. You can manually set your motion paths, you can track a defined area through a sequence of frames and you can record your mouse movements. Lesson Five in the Tutorials in the Aura content directory covers motion paths.



NOTE KeyFramer uses the same animated filter techniques discussed at the beginning of this chapter.



NOTE You can use KeyFramer curves for some filters. See the discussion of the **Path** menu earlier in the chapter.

Motion Path Data

Before you manually create a path, you need to give it a name so you can refer to it later. Click the **New** button to do this. The name you enter is added to the current path pop-up menu at the top of the panel. Aura creates default keys at frame 0 that are



The New button and current path pop-up menu on the KeyFramer panel

positioned in the top-left corner. As soon as you enter a new name, KeyFramer automatically shows a preview of your brush in the Aura work area.

If you want to copy the current path, so you can make changes to it without changing the original, you must choose **Motion > Path Manager** and click the **Copy** button. Then you enter a name for the clone.

In the Path Manager, you can change the name of the current path by clicking the **Rename** button. Give the path a new name in the dialog that appears and hit OK.

If you need to reset your path, simply choose **File > Reset** from the top of the panel. To delete the current path, click the **Delete** button. The other options available on the Path Manager dialog are discussed later.

Manually Creating Keys

You can create keys manually or you can use the other motion filters to create your keys. When you create keys manually you can position, rotate, stretch and apply special effects. We discuss how to create keys with the other motion filters later in this chapter.

To manually create keys using the Auto Key and Brush source:

For this procedure, we'll use a custom brush. You should load or create a custom brush to follow along. However, you can create keys with Auto Key and Layer source as well.

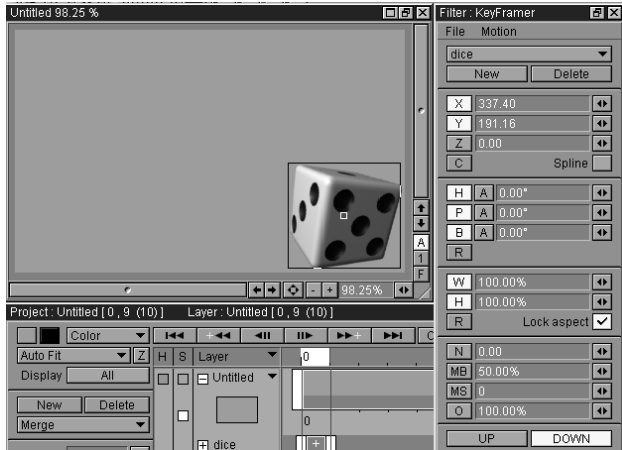
1. Drag an empty layer to about 10 frames duration. Right-click the layer and choose **Make Anim.** On the Layer panel, verify that the Auto Key button is active so that Aura will automatically create your keys.



Drag an empty Layer

2. Verify that your source is **Brush**. Select the **New** button on the KeyFramer panel and name the path. Aura shows a preview of your brush.

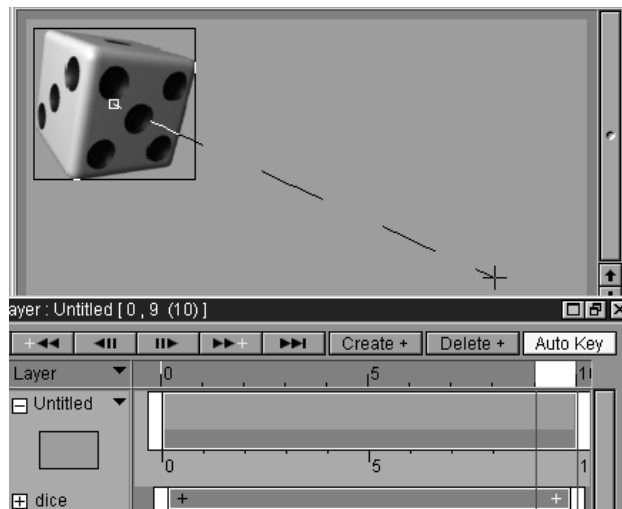
3. Select the first frame in your layer and drag your mouse to move your key to the bottom right of your work area.



First frame, drag key to bottom-right

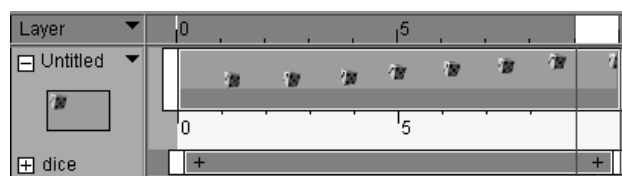
NOTE When you grab a brush in KeyFramer, always grab it by the corner, not the center. Grabbing the center will select the keyframe, which can cause the frame to jump on the timeline after you adjust it.

4. Select the last frame in your layer and move your key to the upper left corner. You should see an elastic vector line stretch from the bottom right key to your new position.



Last frame, move key to upper-left

5. Select all frames in the global timeline.



Select all frames

6. Select the **Apply Filter** button and Aura applies the keys to your layer.

You can use Auto Key to create keys anywhere in a layer – you do not need to start at the first frame. However, notice that you must use the Create key to define the initial key if you do not start at the first frame.

1. Verify that **AutoKey** is active then choose your initial frame on the global timeline.

2. Make your adjustments, such as position and rotation, on the KeyFramer panel, or visually in the work area and click the **Create** key. This defines the initial frame for your new keys.

3. Select the target frame and then adjust your key parameters again.

4. Select the entire layer and click **Apply Filter**.

Aura applies your changes only between your initial and target frames.

To manually create keys without Auto Key:

1. Select the target frame on the global timeline and make sure Auto Key is inactive.

2. Edit the desired parameters on the KeyFramer panel, or visually adjust the key.

3. Click the **Create** button. Keys will be created for all parameters.

NOTE Make sure you don't start dragging while right on top of an existing key because you will select it instead of creating a new key.

Manually Editing Keys

To manually edit existing keys:

1. Choose the path on the KeyFramer panel.

2. Place your mouse pointer directly over an existing key and click to select it. (An unselected key looks like a plus sign and a selected key looks like a square.) The frame that corresponds to that key is automatically selected. You can select multiple keys by holding the Shift key as you click.

3. Numerically edit settings or use your mouse in the work area to change the image visually.



Numeric settings for X, Y, Z coordinates

If you deactivate any of the buttons to the left of the fields, you are precluded from interactively changing the related value with your mouse. Also, using your mouse, you can alter only parameters that already have keys.



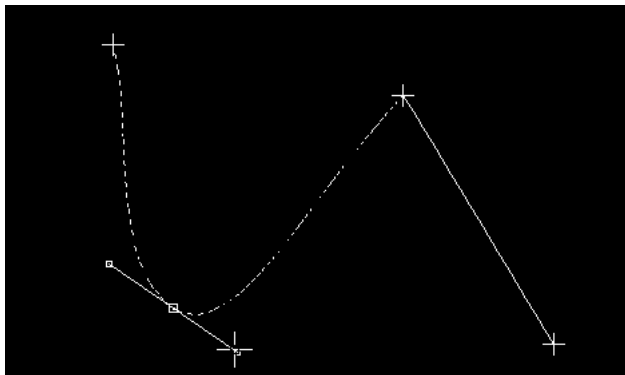
NOTE If you have multiple keys selected, they will all independently reflect changes you make to each field. Thus, if you change only the X field, only the X data of the selected

keys will change.

Linear and Spline Keys

Every key can follow a linear or spline path. You can change the path type by selecting the key(s) and toggling the Spline button on or off.

At first, the change will seem to make no difference. However, if you then drag your mouse over the key, a tangent line will appear. Dragging the tangent handle at either end will change the length and angle of the tangent line, which in turn affects the shape of the curve at that point.

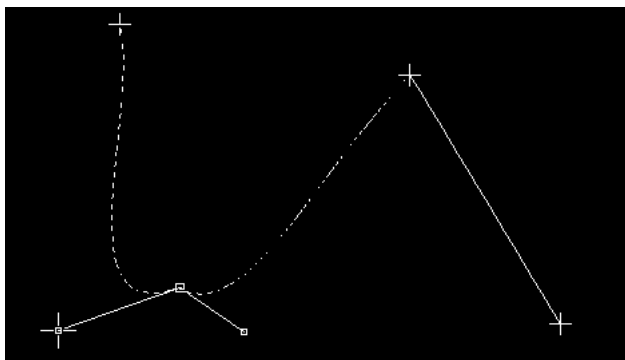


Changing the shape of the curve



NOTE If the curve appears to do a **loop-de-loop**, drag either tangent handle to the other side of the key.

You can break the tangent line, which allows you to control either side independently, by holding the Ctrl key as you drag one handle.

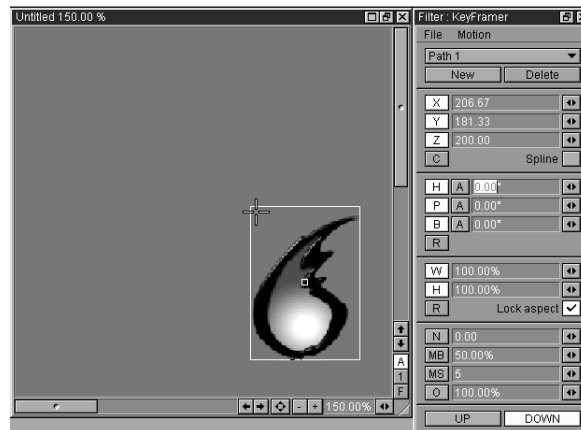


Independent control over one side of tangent line

You can reunite a broken tangent by holding the Shift key and clicking on either handle.

Moving Keys

Dragging your LMB left or right changes the selected key's horizontal (X) position. Dragging your LMB up or down changes the vertical (Y) position. Dragging your RMB up or down changes the depth (Z) position, which affects only brushes. Remember, when dragging a key, grab the brush by a corner; grabbing a brush in the middle may select a current key and snap the timeline to that keyframe.



Moving a key visually in the work area

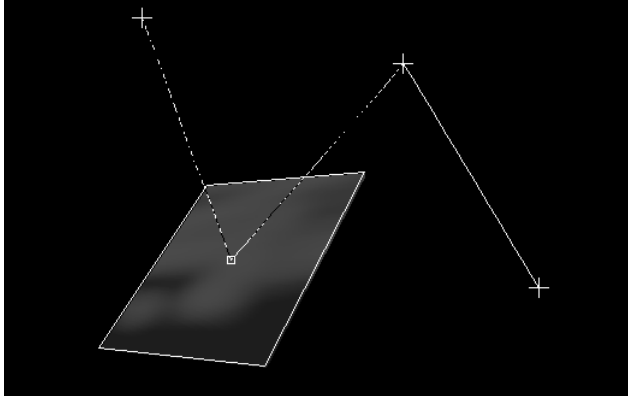
You can numerically set the position using the X, Y and Z fields on the KeyFramer panel. The C, or center, button will compute and enter the position of the center of your project window. Note that the C button works only for the axis buttons that are active, that is if you activate only the X button, when you choose C, only the X axis will be centered.



Numeric settings for X, Y, Z fields

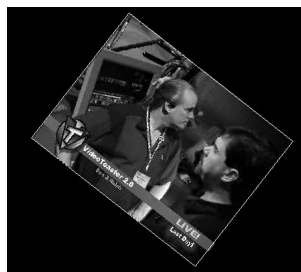
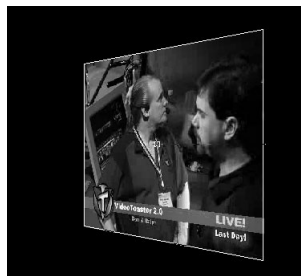
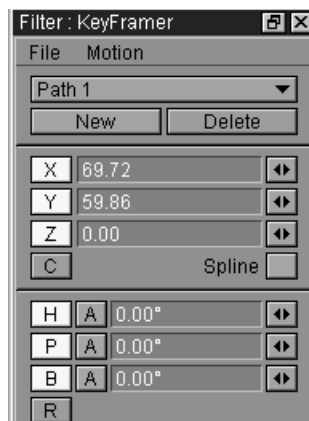
Rotating Keys

You can rotate keys by adjusting the H, P or B fields, which represent Heading, Pitch and Bank, respectively. To adjust rotation visually, you must have the Preview option selected. Hold Ctrl while dragging your LMB left or right to change the key's heading (left to right rotation). Hold Ctrl and drag your LMB up or down to change pitch (up and down rotation). Hold Ctrl and drag your RMB around the key to change bank (clockwise and counterclockwise rotation).



Visually rotating a key in the work area

You can numerically set the rotation using their adjacent fields. Clicking the R button resets fields to 0.

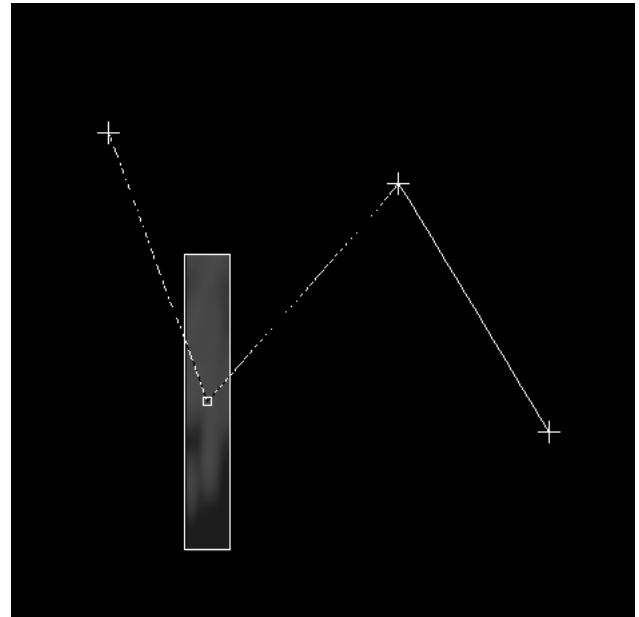


Above left: Heading rotation
Middle right: Pitch rotation
Below right: Bank rotation

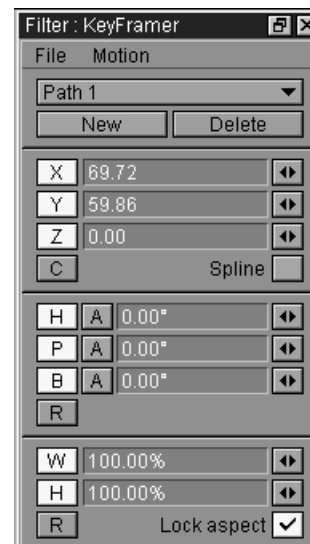
The A buttons activate the align-to-path mode independently for heading, pitch and bank. This is a non-keyable parameter. The KeyFramer will attempt to align the brush to the path for the selected rotation(s).

Scaling Keys

You can scale your brush or layer image with keyframes. Use the Width and Height fields to numerically adjust the dimensions for both brushes and layers. Clicking the R button resets fields to 100%. If you have Lock Aspect active, Aura scales the image so that the aspect ratio of your settings remains constant.



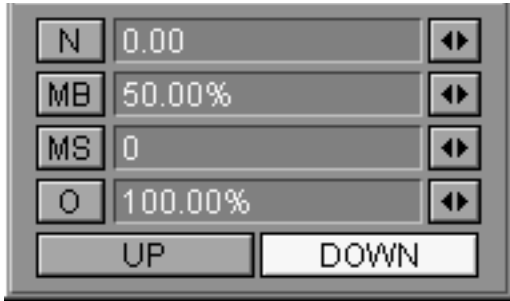
Visually scaling a key in the work area



Scaling a key with numeric settings

Special Effects

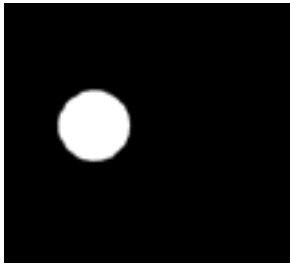
Aura offers several options for applying special effects to your keys.



Special effects on the KeyFramer panel

N, for noise, will add some randomness to the brush position.

MB, for motion blur (Brush mode only), sets the amount of motion blur, which can make moving objects appear to move more smoothly when played back in an animation. Essentially, this mimics the blurring that occurs in the real world when something moves faster than a camera's lens (or our eyes) can freeze, like a speeding racecar. The default setting of 50% should work in most cases.



Before Motion Blur



After Motion Blur

Motion blur is accomplished by adding several semi-transparent images to each brush position. It places these additional images between the current brush position and its previous position, slightly shifting each relative to the others. The distance between each additional image depends on the distance between two successive positions of the brush. The number of additional images depends on the **MS** setting, below.



HINT To get a lot of blur, try using a very high value, like 300%, on the first key for the MB and set MS to 42.

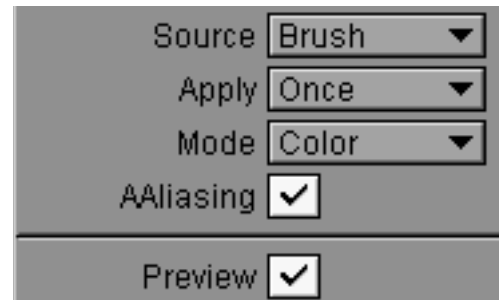
MS, for motion step (Brush mode only), is a non-keyable parameter that works in conjunction with motion blur. It sets the number of compiled blurred images when there is some level of motion blur. Values of 3 to 5 should work in most cases. With the default value (0), no additional images are created.

O, for opacity (Brush mode only), can vary the opacity of the brush over time.

Up and **Down** options refer to whether your drawing button (mouse or tablet) is up or down. This allows you to stop drawing while the direction or other parameters continue on. Note that this is a toggle setting. Once an **Up** or **Down** key is hit, that state continues until the next **Up** or **Down**.

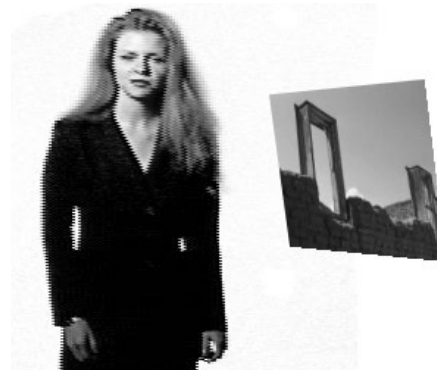
Applying KeyFramer

Use the Source pop-up menu to select the image you want to keyframe. If you select the **Brush** apply mode, you stamp a brush down once in each frame using the current path. Using **Brush** will use the current custom brush. Using **Layer**, Aura acts as if you cut out the selected frames as an animbrush and applied the path with that animbrush.



Pop-up menus on the KeyFramer panel

Using the **Once** setting for the **Apply** pop-up menu, the brush is applied only once, as you would normally expect.



Once mode with a rotated brush

Setting the **Apply** pop-up menu to **Fill** will tile the brush to fill each frame – this includes respect for perspective and size, if the brush is rotated or stretched.



Fill mode used on rotated brush

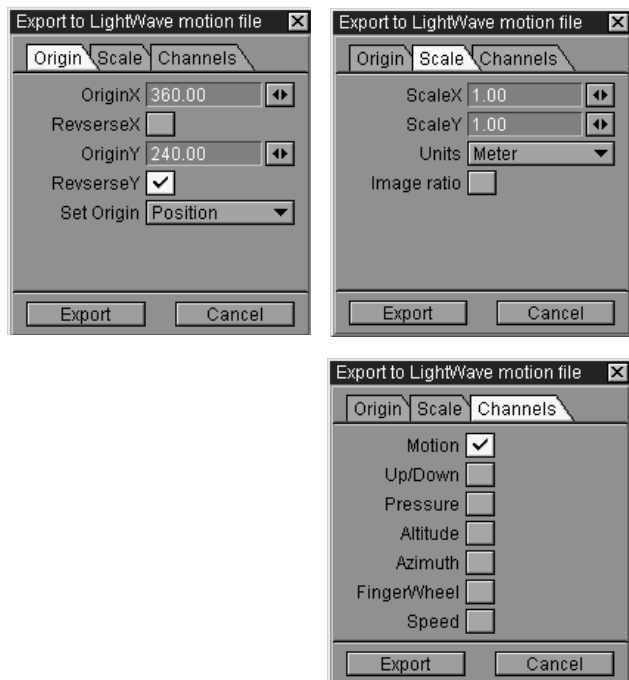
The Mode pop-up allows you to apply various Drawing modes to your keyframe options. You can learn about the different drawing modes in Chapter 6: Drawing Modes and Paper.

The **Preview** button shows a preview in the work area of the motion path you create. To adjust your frames visually rather than numerically, you select the **Preview** option. When you select a motion path that you previously created, you must activate **Preview** to see the path in your work area.

The **AAliasing** option on the KeyFramer panel lets you choose whether or not Aura applies anti-aliasing to your motion path. Anti-aliasing smoothes pixels so that edges do not appear jagged. With motion, AAliasing will smooth the in-between frames you create in KeyFramer.

Exporting a Motion Path to LightWave

The **File** menu has a special option that allows you to save KeyFramer data to a LightWave 3D motion file. When you choose **File > Export to LW Motion**, the standard Aura Export panel appears. You must enter a name for your motion file, choose OK, and then the Export to LightWave Motion panel appears. From this panel, you can adjust the origin, scale and channel options for a motion path. Note that when you export a motion path, it maintains the frame duration of the project you export from. Thus if you export from a project with a duration of 30 frames, the motion path will cover 30 frames.



On the **Origin** tab, you specify the position for the origin of the motion path. The OriginX and OriginY fields let you numerically set the position. The initial values in these fields are based on the dimensions of your current Aura project; the coordinates at the center of your project set the default origin. If you select

ReverseX and/or ReverseY, you can reverse the origin coordinates, which gives them a negative value. The Set Origin pop-up lets you choose standard coordinates for your origin, based on the project dimensions.

The **Scale** tab allows you to widen and/or heighten your motion path. You choose options from the Units pop-up to specify the unit of measure that defines the size of the motion path. When you activate the Image ratio option, you force the motion path to maintain the aspect ratio of the project dimensions.

The **Channels** tab lets you choose which channels to use to export motion paths. Aura exports a separate motion file for each of these channels with the channel name appended to the root motion filename. All options except the speed option apply only to paths created with a Wacom-compatible tablet and stylus.

The Up/Down channel refers to the Up or Down option for your drawing button, (see this option in the section on the Stroke Recorder). You can create keys for a motion path based on this setting.

The Pressure, Altitude, Azimuth and Fingerwheel options work with the Stroke Recorder. You create keys for these paths only if you record your motion path with a tablet or if you edit these fields in the stroke recorder panel.

Speed information occurs with either a mouse or a stylus; the options vary between 0 and 1.

Path Manager

The Path Manager filter lets you manage multiple motion paths.

From the **Manage** tab, you can access buttons to rename, invert, copy and delete paths. Simply select the path and choose the appropriate button. Remember that once you delete a path that you cannot retrieve it again.



The Manage tab on Path Manager

On the **Average** tab, you can choose from different paths that you've made and Aura will average together the motion. When you average paths together, Aura prompts you for a new name. To see the new path, you must apply it to a layer from one of the motion filters.



The Average tab on Path Manager

The **Smooth** function takes all keys in a motion path and smoothes the motion. Pixel tracking often creates a jerky motion path; Smooth improves the motion path. Choose a path for smoothing from the pop-up menu and then enter a value in the **Smooth** field. The value you enter determines the radius of the smoothing effect in pixels. Larger values will produce a smoother motion path.



The Smooth tab

You can access the other motion filters by selecting the Motion menu near the top of the panel. Alternatively, you always can access the Path Manager from the motion filters via the same route.

Pixel Tracker

As mentioned before, you can create a path by tracking an area through an animation. You start this process by selecting **Motion > Pixel Tracker**, which displays the Pixel Tracker panel. (See Lessons Nine and Ten in the Aura Tutorial directory to learn techniques for using the Pixel Tracker.)

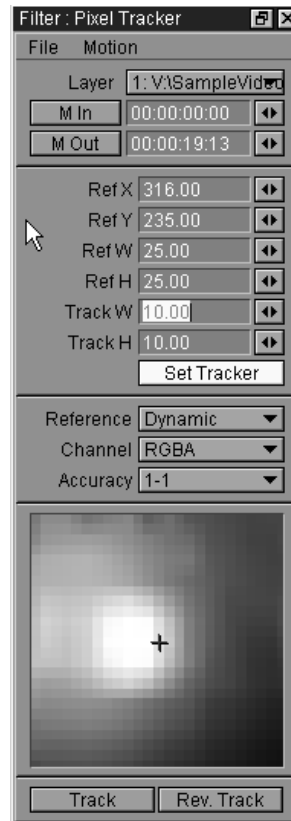


NOTE You can access all of the motion filters from any motion filter panel by selecting the **Motion** menu at the top of the panel.



NOTE It is not necessary to click the **New** button first. The tracked path will be added automatically as Track #.

You can choose a specific layer that contains the pixels that you want to track. Available layers appear in the **Layer** menu, and when you choose the layer you want to track, it appears in the preview area. When you select **Current**, Pixel Tracker tracks the selected layer. If you select **Display**, it tracks the proj-



Pixel Tracker panel

ect display. A red layer is a video layer. When you set a layer in the menu, it automatically updates the **M In** and **M Out** point.

The **M In** and **M Out** buttons give you control over where tracking begins in the timecode of the animation. So, you can offset pixel tracking from the actual beginning or end of the animation. You drag the arrows beside the field to change the timecode and then click the **M In** button to set the start (or "in") frame for tracking. Follow the same procedure and click the **M Out** button to set the end or out frame.



Visually setting the pixel to track

RefX and **RefY** define the center position of the pixels you want to track. **RefW** and **RefH** define the width and height of the tracked pixels. **TrackW** and **TrackH** define the tracking area; i.e., the area in which tracked pixels can be found. Note that this is a moving area so the pixels need only appear within this area from one frame to the next. You'll want to keep this area as small as possible for accuracy and speed.

Fortunately, you can graphically set these parameters by clicking the **Set Tracker** button.

The plus sign defines the center position, which you can move by dragging your mouse. The inner rectangle is the tracked pixel area. You can adjust this interactively by holding your Ctrl key and dragging your mouse. (Adjust the tracking area by changing the **TrackW** and **TrackH** parameter values.)

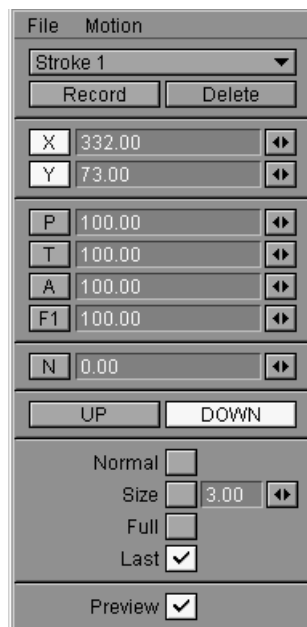
When **Reference** is set to **Static**, the first frame is used as a tracking reference during the whole tracking operation. If the **Dynamic** setting is used, the reference is updated at every frame.

The **Channel** pop-up menu sets the channel that Aura looks for when tracking. Depending on the image, you may get better results if you narrow the tracked pixels to a single channel. You can choose from the standard RGBA, Red, Green, Blue or Alpha channels. Aura also lets you specify a Luma channel and a Saturation channel so that you can track based on the brightness of saturation of an image area.

Use the **Accuracy** pop-up menu to set how accurate you want the tracking to be.

The **Rev Track** button lets you reverse the direction of the motion path as you track your image area.

Stroke Recorder



Stroke Recorder panel

The Stroke Recorder records the movement of your brush across the screen. This is useful when you want to animate something like a handwritten signature. (See Lesson Seven in the Aura Tutorial directory to learn techniques for using the Stroke Recorder.)



NOTE It is not necessary to click the **New** button first. The recorded stroke will be added automatically as Stroke #.

You click the **Record** button to begin recording your brush strokes. Now, in the project window, draw out the stroke you want to record. When you are done, click the **OK** button. To cancel the recording operation and return to the KeyFramer panel, click **Cancel**. If you select frames *before* you click **Record**, Aura will stretch the recorder path to the selected length.

To apply the stroke, select the Custom Brush button from the main panel, then drag out an empty layer the desired number of frames. Right-click the layer icon and select **Make Anim**. Then select all of your frames and click on **Apply Filter** in the Stroke Recorder panel. Aura draws your stroke across the frames.

Stroke Recorder Parameters

The **X** and **Y** fields allow you to enable or disable the X or Y axis.

The **P**, or pressure, field offers you a value that responds to the pressure of your stroke if you are using a Wacom tablet and pen. The value that you define indicates the minimum pressure required for a stroke to be recorded.

The **T** field represents a value for Azimuth that ranges between 0 and 100.

The **A**, or altitude, field represents a value for the angle of your pen if you use a Wacom tablet to draw your stroke. You can specify an altitude between 0 and 100 that tells Aura the minimum required for a stroke to be recorded.

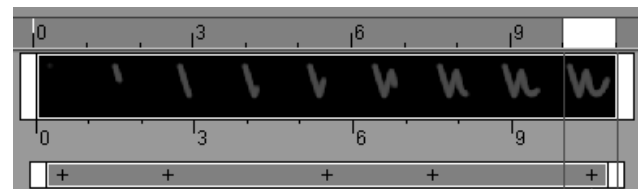
The **F1** field lets you enter a value between 0.00 and 100 that adjusts your fingerwheel.

The **N** field allows you to add noise to your stroke recording, which gives the stroke a jittering effect. A value of 0.00 adds no noise.

The **Up** and **Down** buttons specify whether your drawing button (mouse or tablet) is up or down. This allows you to stop drawing while the direction or other parameters continue on. Note that this is a toggle setting. Once an **Up** or **Down** key is hit, that state continues until the next **Up** or **Down**.

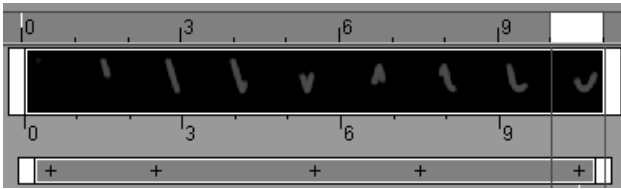
Applying Stroke Recorder

The next group of options affects how Aura applies the filter. With the **Normal** option selected, Aura applies the path over the selected frames just as if they were made using your mouse or drawing tablet.



Using the Normal option to apply a recorded stroke

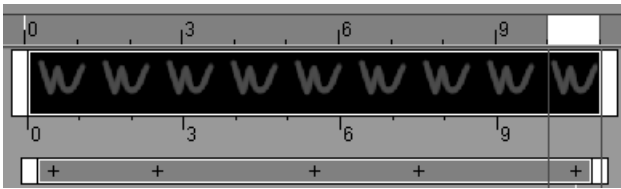
Using the **Size** option, Aura erases the beginning of your brush stroke as the animation progresses. The adjacent input field sets the number of frames to hold before erasing.



Using the Size option to apply a recorded stroke

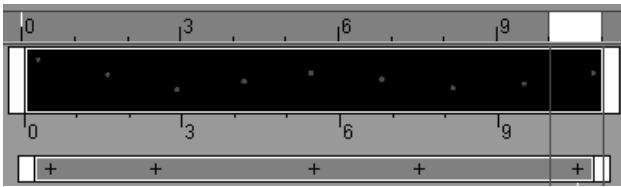
If you use the Stroke Recorder with the Text tool and **Size**, Aura treats each text letter as an independent element. Therefore these elements may get closer to each other, or move away from each other, depending on the movement speed. To prevent this from happening, create the brush and then select the Custom Brush tool.

With the Full option, Aura draws the entire path on each frame.



Using the Full option to apply a recorded stroke

With the Last option, Aura draws a single dot at the end of the last brush stroke on each frame drawn.



Using the Last option to apply a recorded stroke



NOTE To define the duration of the stroke, select frames in a layer before recording.

Key Stabilization 1 Point

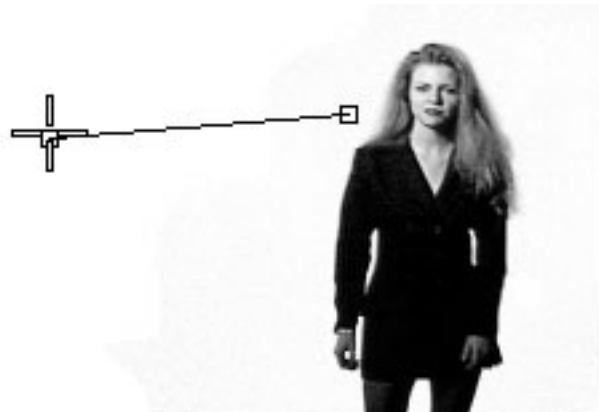
Use this filter when you want to remove the motion from a hand-held sequence that has been filmed to stabilize the images.

There are two modes: **Panning** and **Shift**.

Panning tiles the image to fill the screen. While **Shift** does not tile, you may see underneath the layer.

The **OriginX** and **OriginY** define a starting point on the frame. The **DestX** and **DestY** define a target point on the frame. The filter basically moves the image so that the points line up.

To interactively set these two points, click the **Set** button. You will see a small box in the upper-left corner. Drag it to your starting point location. You will see the **OriginX** and **OriginY** fields update. That point will be connected to another point still in the upper-left corner. Drag the second point to define the target point.



Interactively setting points for Stabilization 1 Point

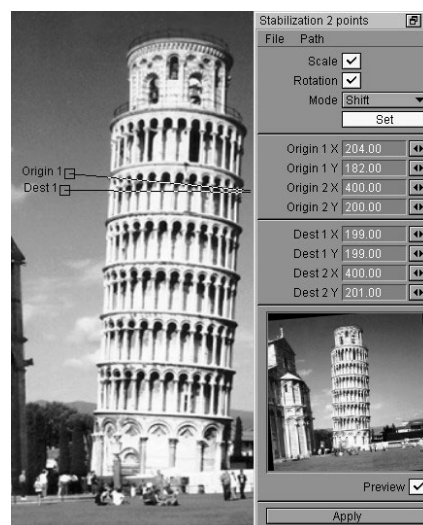
Key Stabilization 2 Points

This filter allows more elaborate means to remove the motion from a hand-held sequence. Two source pixels from the original image are used to provide the necessary information, rather than merely one. The filter can infer an angle of deviation from the baseline between them for each frame of the clip. The angle derived can then be used to correct for rotational instability. Likewise, any variance of the distance between the two source pixels can be taken to indicate zoom, or movement on the Z-axis. This can be corrected by scaling.

As with Stabilization 1 Point, there are two modes:

Panning and **Shift**. **Panning** tiles the image to fill the screen. **Shift** doesn't tile, meaning you may see whatever is underneath the layer. The two additional options, **Scale** and **Rotate**, permit the corrections mentioned above to be performed selectively. You can choose to correct for Rotation only, Scale only, or both.

You can interactively set the two Origin points and their Destinations by dragging points on the project window. To do so, click the **Set** button. The **Origin** and **Dest** fields update as you move the boxes.



Interactively setting points for Stabilization 2 Points

However it will often be more practical to use this filter in conjunction with motion paths derived using the **Pixel Tracker** filter. Use the latter to track two prominent pixels, and save their motion paths separately. Also, take careful note of the starting X and Y co-ordinates for each.

Then, in the Stabilization 2 Points filter, set the Dest1 X and Y and the Dest2 X and Y values to those starting co-ordinates. Next, use the filter's **Path** menu to set **Origin1** to the path you saved for the first source pixel, and **Origin2** to the second path. Click **Apply** to render the selected frames. Afterward, depending on your purpose, you may find it necessary to crop out unwanted margins and scale the entire layer to fill the frame.

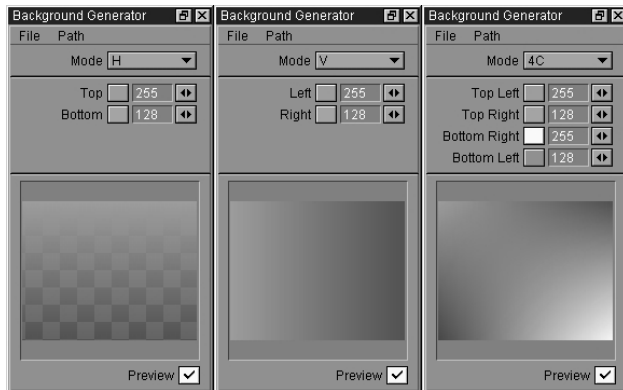


HINT The Pixel Tracker can produce motion paths which are themselves a bit “jumpy.” You may find it practical to apply a little smoothing using the Path Manager, before re-saving the two paths and using them in the Stabilization 2 Points operation described above.

RENDER



Background Generator



Background generator panel from left to right: Horizontal gradient, Vertical gradient, and 4Corner

With the Background Generator, you can apply a color gradient to the current layer. The Background Generator accepts alpha values, so your gradient can be semi-transparent.

Choose from three modes when you work with the Background Generator:

H creates a horizontal gradient. Choose the **Top** color and a **Bottom** color, and specify an alpha value in the field beside the color tile. 0 will be completely transparent and 255 will be completely opaque.

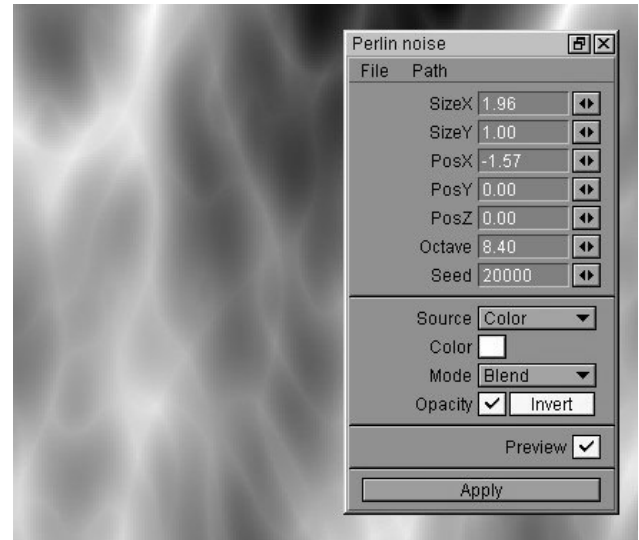
V creates a Vertical gradient. You choose the **Left** and **Right** colors and define an alpha value in the field beside the color tile.



4C creates a four-corner gradient. You choose colors for the **Top Left**, **Top Right**, **Bottom Left**, and **Bottom Right**. Set an alpha value in the field beside the color tiles for each corner.

Perlin Noise

This tool applies a procedural pattern to the current image. Perlin noise was developed to enhance the realism of computer generated graphics by “dirtying” them up using pseudo-random textures. Additionally, it can be used to simulate clouds, smoke, or a wide variety of natural textures such as marble, wood, or flames.



Perlin Noise example

The controls in the upper part of the settings panel define the texture to be generated. The **SizeX** and **SizeY** fields adjust the scale of the pattern along the X and Y axes, while the **PosX**, **PosY** and **PosZ** settings vary its location.



HINT Animating the **Pos** parameters can create the impression of flying past or even through clouds.

Raising the **Octave** setting increases the level of detail in the texture. The filter uses the **Seed** setting to provide a pseudo-random result. For all practical purposes, the number you choose does not really matter.

The settings in the lower section of the panel determine how the texture will be painted into the current image. The **Source** pop-up menu presents **Color**, **Gradient**, and **Layer** options.

Selecting **Color** tells the filter to use the single color you set in the **Color** swatch below to paint the pattern. The pattern will be created using this source color, falling off either to black or to transparency depending on the state of the **Opacity** switch.

Consider an example: with Source set to Color, Color set to blue and Opacity off, the Perlin pattern will appear as blue over black, ignoring any previous content in the frame. With Opacity on, the blue pattern is still painted into the frame, but any existing imagery is preserved where black appeared in the previous example.

The Source **Gradient** option initially uses your current A and B colors to generate the pattern. Activating Aura's Gradient function permits more elaborate gradients to be used. Click on the gradient bar in the filter panel to activate the new gradient.

Finally, choosing Source **Layer** will create the pattern using the color values of corresponding pixels from the current layer.



NOTE When **Layer** is selected as the active Source, the **Opacity** and **Mode** selections are not available.

The **Mode** setting designates the mode Aura uses to paint the Perlin pattern. **Blend** mode paints the pattern down over any existing imagery, while most other modes correspond to standard Aura paint and merge options by the same name. The exception is **Preserve** mode. Preserve is the equivalent of painting in Behind mode, and prevents the new pattern from affecting existing pixels based on their opacity. **Invert** reverses the pattern created.



HINT By using the Invert button with appropriate values in the Perlin noise filter, you can easily create realistic caustic patterns like those caused by sunlight beneath the surface of a swimming pool, or wispy tendrils of "smoke."

Click Preview to see the effect of your current settings, and Apply to render the effect.

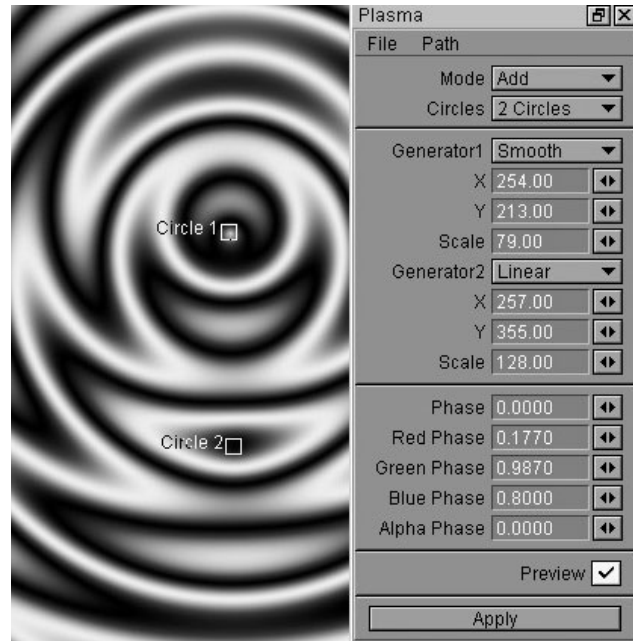


NOTE Most settings for Perlin noise can be keyframed, allowing you to animate the appearance or positioning of the texture over time.

Plasma

This tool also creates a procedural pattern in the current image. The effect can be quite complex. Basically, it is comprised of one or more sets of concentric rings and their interference patterns. It may help to think of these as "ripples", each emanating from a **Generator**.

The uppermost section of the control panel offers the **Circles** pop-up menu, which permits you to designate how many Generators are used. You can choose from one to four Circles. Choosing **1 Circle**, the pattern formed will be a single set of concentric rings. The ripples from two or more generators will interfere with one another creating more diverse effects.



Plasma Example

Unlike the similarly named control elsewhere in Aura, the **Mode** pop-up does not designate how the pattern will be painted into the current image. If Plasma is applied to existing imagery, that imagery will always be completely overwritten by the filter's output.

Rather, the **Mode** options (**Add**, **Average**, and so on) control how values from different generators are combined mathematically where they interfere with one another. Hence this setting has no effect on the pattern created by a single generator, but can have a dramatic impact when there are several.

In the next part of the menu there are settings for each Generator. The pop-up menu named for each Generator permits you to select **Smooth**, **Linear1** or **Linear2**. The settings modify the way the waveform is calculated. The **X** and **Y** settings designate the center point for each generator. Changing the location of the generators impacts the interference patterns created.



HINT Since the Generator positions can be keyframed using the **X** and **Y** values, dramatically shifting plasma patterns can be created.

The individual **Scale** settings control the density or wavelength of the ripple(s). Scale values also can be keyframed along the Aura timeline, enabling you to create constantly changing patterns.



HINT Animating the Scale value is one way to create the appearance that the ripples are spreading outward from the Generator location. Increasing this setting effectively lengthens the wavelength of the ripple, causing the size of the ripples generated to appear to grow and spread, with less rings being created.

The lower section of the setting panel contains various controls with mini-sliders. Direct numeric entry of values also is possible. The uppermost setting is the global **Phase** control. This effectively alters the pitch of the spreading waveform. Increasing it may be thought of as equivalent to causing the ripples to roll outward. Unlike the effect of increasing Scale, the apparent wavelength and frequency of the pattern are not altered. The ripples merely seem to continue to propagate outward, without change in proportion.

Next in order are **Red Phase**, **Green Phase**, **Blue Phase**, and **Alpha Phase** settings. These control the colors and opacity used to paint the pattern. Each color phase control cycles through values of its corresponding channel, affecting both the primary color and its complement. So, for example, Blue Phase adjusts both the blue and yellow hues used in the pattern. Modifying the phase alters the contribution of these two hues to the pattern, controlling both their values and locations on the ripple pattern.

Likewise, **Alpha Phase** controls the level, breadth, and placement of transparency in concentric bands along the waveform ripples.



NOTE Phase settings cycle at integer values. Hence, all else being equal, a global Phase setting of 1.00 will produce the exact same pattern as 0.00. Likewise, a setting of .351 will be identical in appearance to the result of a phase setting of 2.351, and so on. This enables you to easily create looping patterns – such as spreading ripples – by keyframing starting and ending values which, though incremented, correspond to one another.

SPARE RELATED FILTERS

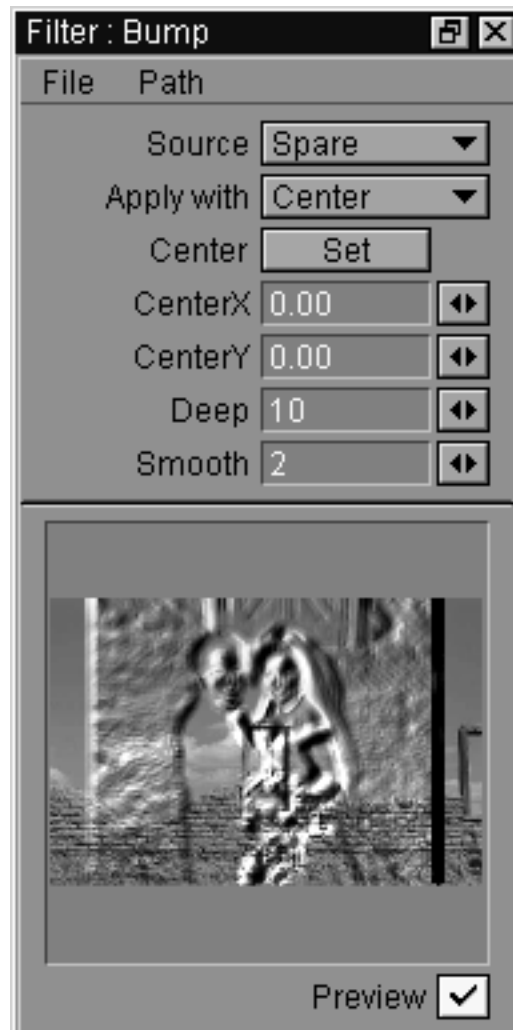
These filters generally require that an image be copied to the spare image buffer. This is discussed in Chapter 2.

Key Bump

The Bump filter uses the brightness values of the spare image to emboss areas of the current image. Light areas appear raised and dark areas appear lower. Embossing will also be less pronounced where the opacity is less in the spare image. This filter can produce stamped metal effects or simulate the grain of paper and fabric.

As an alternative to using the spare image for the bump, you also can use the current paper as the **Source**, if that option is active.

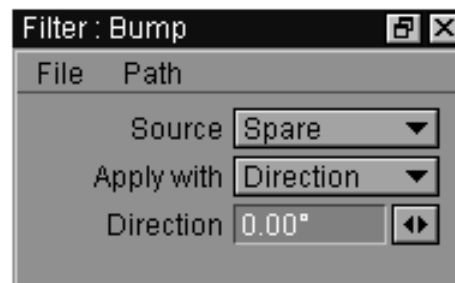
If you set the **Apply With** option to **Center**, the **CenterX** and **CenterY** values indicate the position of the light source that highlights the relief. You can enter these values manually or you can click the **Center Set** button and then click on a position.



The Bump filter with preview

Depth determines the depth, or power, of the filter. The relief created in the image intensifies at higher depth values. The **Smooth** setting smooths the edges of areas in relief. The amount of smoothing increases for higher values of this setting.

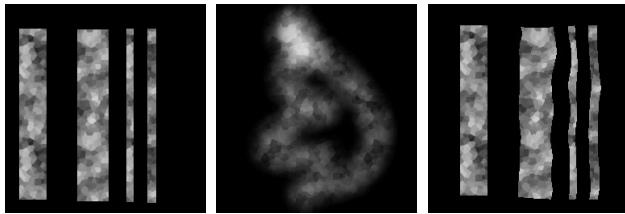
If you set the **Apply With** option to **Direction**, you can choose the angle that the light is coming from.



Pop-up menu for Apply With option

Key Extrude

The Extrude filter uses the same parameters as the Bump filter; however, it uses the brightness values of the spare image to displace areas of the current



Left: Original. Middle: Spare image. Right: After Extrude image. Light areas have more displacement power than dark areas.

Lumix

Lumix uses the spare image to modify the luminosity of pixels in the current image. If the brightness of a pixel in the spare image is greater than 128 (the median luminosity value), the corresponding pixel in the current image is made lighter. If less than this value, the corresponding pixel in the current image is made darker. There are no settings for this filter. You can intensify the effect with multiple apply operations.

Spare Mixer

The Spare mixer filter uses the spare image to perform a number of different options on the current image.

Add Front pastes the contents of the spare image on top of the current image. The spare image must have some level of transparency or you will no longer be able to see any of the existing current image.

Add Behind pastes the contents of the spare image behind the current image. The existing current image must have some level of transparency or you will not see any part of the pasted spare image.

Add Alpha adds the opacity of the spare image to the opacity of the current image. **Subtract Alpha** does the opposite by subtracting the opacity of the spare image from the current image. You can use the spare image like a mask with this option.

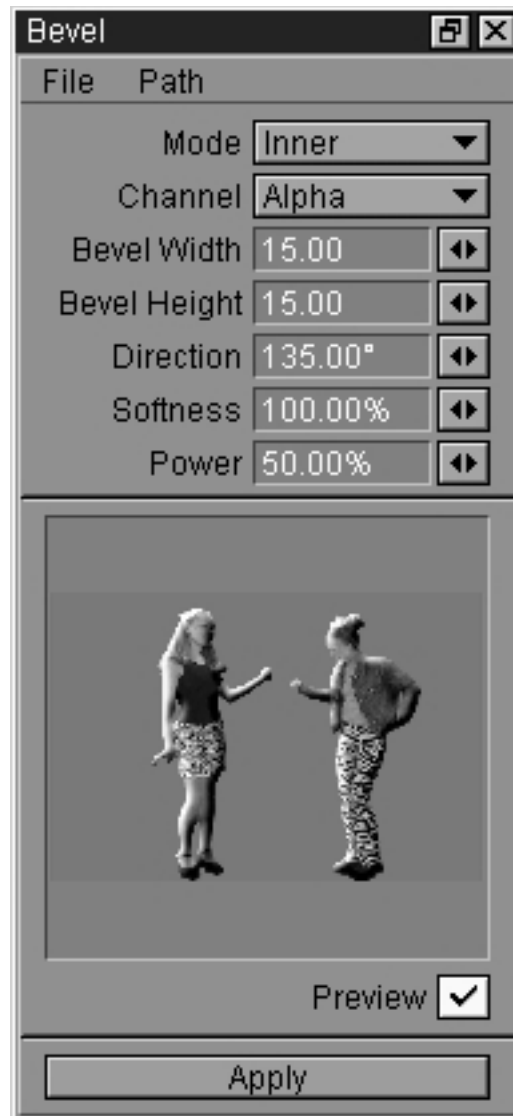
SPECIAL FX FILTERS

Bevel

The Bevel filter creates an image that appears to be stamped, raised or embossed on the background.

The **Mode** menu lets you choose the type of bevel that you want to apply. The **Inner** bevel makes the image look stamped into the background. The **Outer** bevel raises the image over the background; it works only with an alpha channel. **Both** applies **Inner** and **Outer**, which looks like a pillow emboss.

On the **Channel** menu you choose which channel you use to apply the mask for your bevel: **Red**,



The Bevel filter with preview

Green, Blue, Alpha or Luma. Red, Green, and Blue are the color channels of the image, Alpha refers to the density of those color channels and Luma refers to the black and white portions of the image.

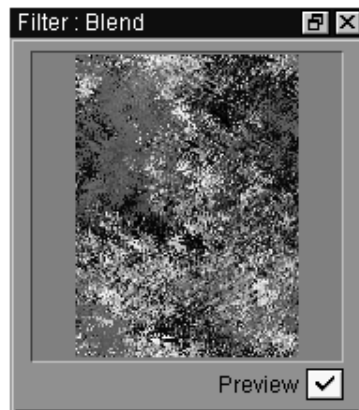
The **Bevel Width** and **Bevel Height** fields let you set the size of the bevel in pixels. Essentially, you use these settings to adjust the depth of the bevel.

The **Direction** field sets the angle of light. **Softness** determines the percentage of blur to apply to the edge of the bevel; with a value of 0 you get a hard edge and with a value of 100 you get a very soft edge. The **Power** field lets you set the intensity of the bevel in percentage. **Power** and **Softness** can work together to make a more concentrated or diffuse bevel.

Blend

The Blend filter mixes colors in the current image; however, all edges of the resulting image are continuous. This means that you can use the Panning tool

(Main panel) to shift the image in any direction, and you will never see a join line. Therefore you can use these images to create bump maps for 3D programs.

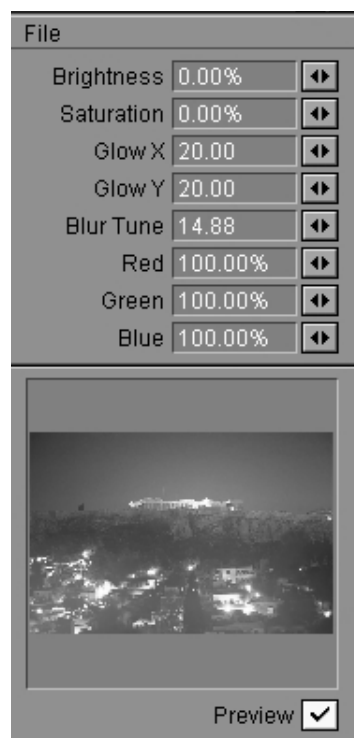


Blend filter with preview



NOTE Application of this filter involves an amount of randomness, so you will never obtain the same result with two identical images.

Key Bloom



Bloom filter with preview

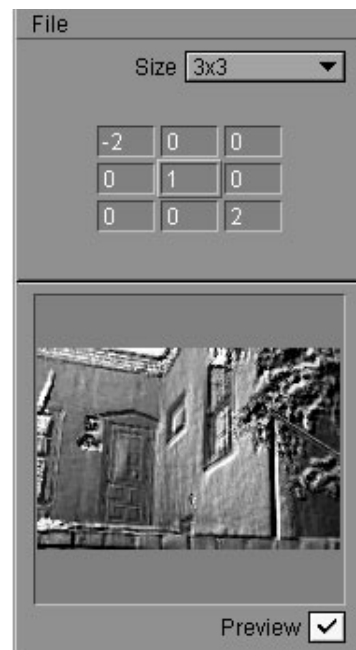
Bloom applies a blooming effect to the pixels in the selected image. You can vary the brightness of the bloom, the saturation of color, and the bloom color, and the bloom size.

Use **Brightness** to adjust the lightness or darkness of the bloom. Use **Saturation** to adjust the intensity of the bloom's color.

The fields for **Glow X** and **Glow Y** let you set the bloom size on each axis. The size is measured in pixels. The Blur Tune field lets you fine tune the bloom: 0.5 is a fine blur and 20 is a rough blur.

Finally, you can alter the actual color of the bloom by entering different values in the **Red**, **Green**, and **Blue** channels.

Convolutions



Convolutions filter using 3x3 matrix

A *convolution* is a mathematical formula that can make an image sharper, more blurred, embossed, outlined, and more. This filter allows you to set up either a **3x3** or **5x5** *convolution matrix*. (The time taken to apply the filter increases as the number of convolution coefficients increases.) Each value in the matrix is called a *coefficient*.

The convolution calculates a new value for each pixel in an image by taking the average of the values of the pixel and the pixels surrounding it. Each coefficient is independent and can have a unique value. The coefficients and the way in which they are distributed around the central pixel can give a wide variety of effects. As such, a 3x3 matrix takes into account only directly adjacent pixels. A 5x5 matrix, on the other hand, considers more remote pixels.

With a 3x3 matrix, the new central pixel value is obtained using a weighted average. In other words, the sum of the product of each coefficient and its corresponding value, divided by the sum of the coefficients.

So much for the principle of the operation. What

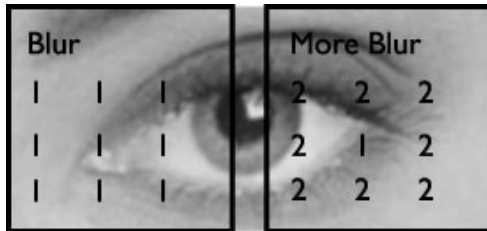
really matters is the result. The following examples will give you an idea of what can be done.

With the Blur convolution matrix, each pixel is simply calculated as being the average of its neighboring pixels. (Note that the Smooth filter and Blur drawing mode are more efficient; however, this example is useful to help you understand how convolutions work.)



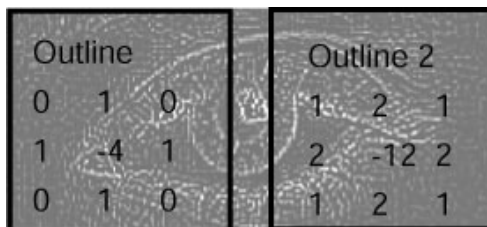
Unaltered image

The More Blur convolution matrix gives more weight to neighboring pixels than the central pixel, which results in a more intense blur.



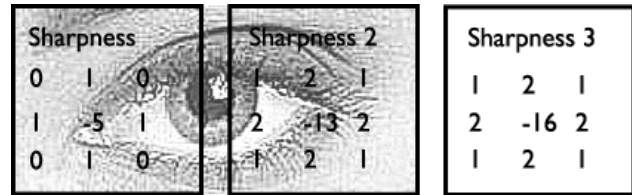
The Outline convolution matrix can extract the outlines of the image. Plain colors become black. The limits between different colors become light. The limit tends more towards white as the difference between the colors becomes more marked.

If you transform the image to its negative, the effect obtained will be different. To draw outlines, the central coefficient must be the opposite of the sum of the adjacent coefficients. In the example, the sum of the adjacent coefficients is 4 ($0+1+0+1+1+0+1+0$). Therefore the central coefficient is -4. Outline 2 shows a variant of this matrix.

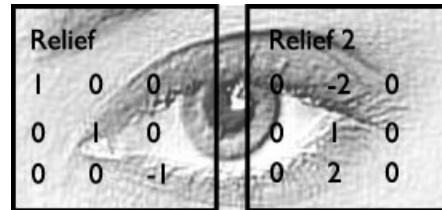


The Sharpness convolution matrix increases the contrast between each pixel to sharpen an image. (Note: These are essentially modified Outline convolutions.) However, note that as the image becomes sharper, all its imperfections (grain, noise, etc.) become visible. The sharpness becomes more apparent as the central coefficient becomes closer to

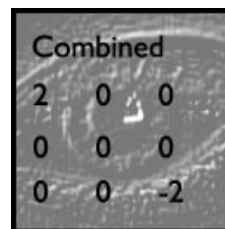
its "pivot-value" (the opposite of the sum of all adjacent values). The sharpness becomes less apparent as the central coefficient moves away from this pivot-value. The Sharpness 2 matrix is a more powerful variant and Sharpness 3 less powerful.



The Relief convolution produces an effect similar to illuminating a textured image with a ray of light almost parallel to its surface. Plain colors remain unchanged. The limits between different colors become lighter or darker depending on their position relative to the light. The highlighting effect (light or dark) becomes stronger as the difference between the colors becomes more marked. The orientation of the light is defined by the distribution of the positive and negative coefficients around the central coefficient. In the example, the light is coming from the top left. Relief 2 is a more powerful variant with lighting from the bottom.

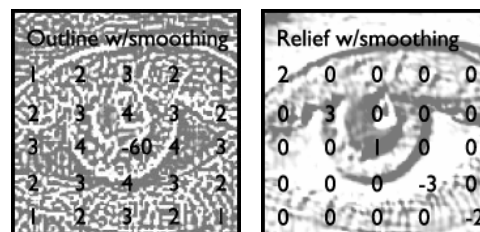


The few examples given above are not restrictive nor exhaustive. You can make any variations you wish. The Combined example will give an outline and a relief effect at the same time.



5x5 matrices

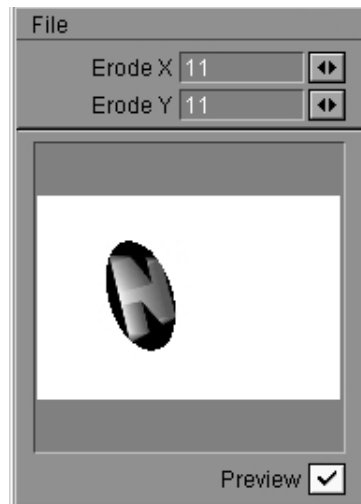
The only difference between 3x3 convolutions and 5x5 convolutions is that the 5x5 matrix takes into account of more pixels (25 instead of 9) and can, therefore, produce more subtle effects.



Convolutions filter sets

You can load or save convolutions as files using Load and Save on the File menu. Several convolution files should already exist in your Aura Convolve directory.

🔑 Erode



Erode filter with low settings

The Erode filter erodes the edge or border of the selected image. When you choose Erode, you create an alpha channel that masks out the eroded areas.

The options for this filter let you set **Erode X** and **Erode Y**, which represent the size of the erosion effect in pixels. **Erode X** sets the horizontal size and **Erode Y** sets the vertical size. If you enter a large number in this field, you essentially erode a larger border around the image.

🔑 Glow



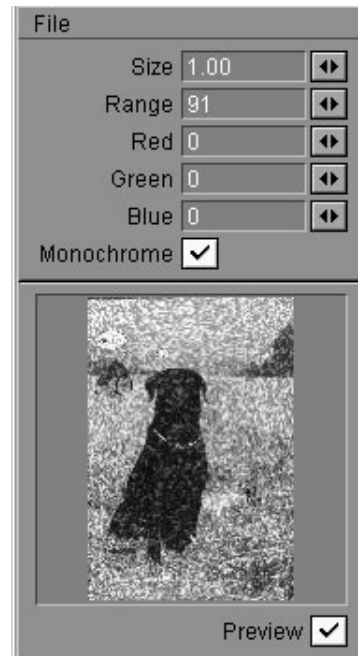
Glow applies a gaussian blur around the border of your object to create the look of a glow. The glow surrounds the entire object, and you can set its color

and size.

You can choose the glow **Color** and enter an alpha value in the adjacent text field. The alpha value gives you transparency: 0 is completely transparent and 255 is completely opaque.

The **GlowX/GlowY** fields represent the glow size on each axis, defined in pixels.

🔑 Grain



The Grain filter adds film-like grain to the selected image. A little grain can ease the unrealistic smoothness of computer images, or you can use more grain for an artistic effect like stippling or pointillism.

The grain **Size** sets the cluster of pixels for each grain. A smaller size uses fewer pixels and gives you a more subtle effect.

The **Range** option lets you enter the amount of grain variation to apply. Smaller numbers yield less variation between grains, so that the effect is more uniform across the image. Larger numbers give a more random appearance to the grain.

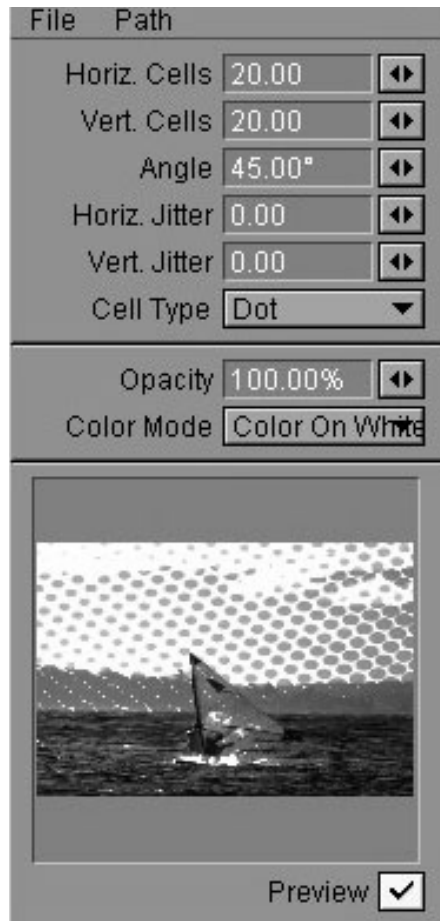
The **Red**, **Green** and **Blue** fields let you control red, green, and blue grain noise. That is, you can add noise to the image that uses a particular RGB color. For example, if you wanted to add white noise, you would set the fields to 255, 255, 255.

The **Monochrome** button lets you choose monochrome coloring for the noise. When you use the **Red**, **Green** and **Blue** fields with **Monochrome**, you create a random offset for later in the grain process.

Halftone

The Halftone filter emulates the screened appearance common to printed artwork. Unlike the less

elaborate Print filter, Halftone varies the size of the mesh according to the source value of the pixels being processed. The **Horiz. Cells** and **Vert. Cells** values set the global resolution of the mesh pattern, while **Angle** rotates it.



Halftone filter panel with preview

Horiz. Jitter and **Vert. Jitter** introduce some randomness in the resulting pattern, and the **Cell Type** pop-up menu allows you to choose from several different styles, including **Dot**, **CrossHatch**, **Line**, and the like.

The **Opacity** setting provides control over the intensity of the effect, with higher percentages being more pronounced. Finally, **Color Mode** offers 5 different ways to apply the halftone mesh with different painting methods.

Print

The Print filter applies a print half tone to an image. The **Apply in** pop-up menu determines how the filter is applied. **Color** applies the effect using colored dots. **Black&White** applies the effect using black-and-white dots. **Opacity** applies the effect by changing the opacity in the dot pattern.

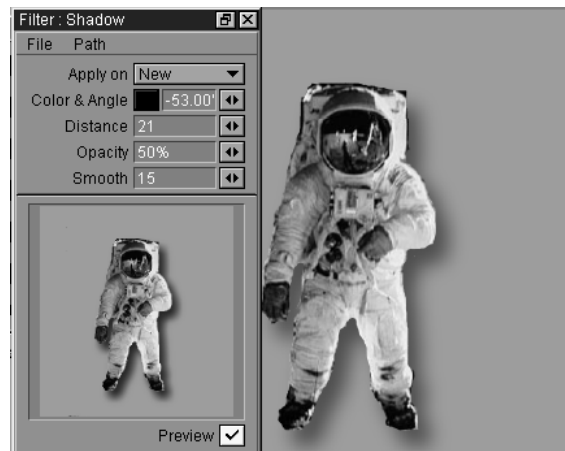
Size sets the dot size in the half tone. Image details are increasingly altered as dot size increases; therefore, it is usually preferable to keep dot size fairly small.



Print filter panel with preview

Shadow

This filter creates a shadow for your image. You choose the color, the intensity and position of the shadow, and its distance from the image. This shadow may be applied under the current contents of the image, or in another layer placed under the image. As such, the shadow is only visible in transparent parts of the image. If you create a shadow in a completely opaque image, you will not be able to see it.



Shadow panel with preview



NOTE For an animation layer, applying this filter to a new layer creates a new anim layer (instead of an image layer) if at least two images are selected.

Set the **Apply on** pop-up menu to **Current** to apply this filter to the current image or current layer selection. Choose **New** to create the shadow in its own underlying layer.

Click on the color button to change the color of the shadow. The field just to the right of the button sets the angle of the light source. When you adjust

the angle with the minislider, a directional compass appears. As you change the value, Aura updates the compass for easy interactive selection. The shadow in the preview window also updates in real-time.

Distance sets the distance, in pixels, between the shadow and the image. When this value is zero, you can use the **Smooth** setting to create glow effects around objects. (See Hint below.)

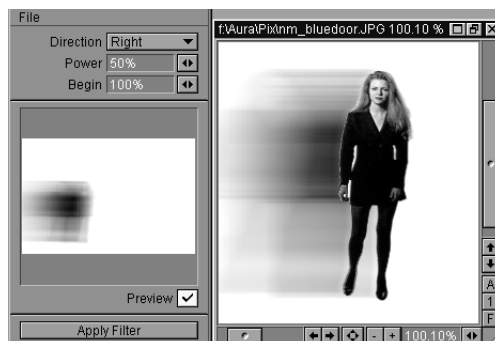
Opacity determines the intensity of the shadow. A value of 50% means that the shadow is half transparent. That is, half of what you see will be the shadow and half will be the underlying imagery.

Smooth blurs the outlines of the shadow. The shadow becomes smoother as its value increases. Use this to avoid a hard-edged shadow. This may tend to weaken the intensity of the shadow, so you may want to adjust the shadow **Opacity**. You also can reinforce the shadow intensity by applying this filter several times consecutively.



HINT You also can use this filter to create glow effects (phosphorescence, neon lights, etc.). Choose white as the shadow color, set **Opacity** to 100%, **Distance** to 0 and **Smooth** to 4 or 5. The shadow will then be generated just under the contents of the image but the smoothing will spread it slightly. This creates a white glow around objects. You can apply the same filter again to intensify the glow (reducing **Smooth** if you wish).

Speed



Speed panel with preview

The Speed filter applies a sliding blur effect to an image. This effect gives the impression that the image is moving in a given direction, at a speed that varies depending on the power of the applied effect.

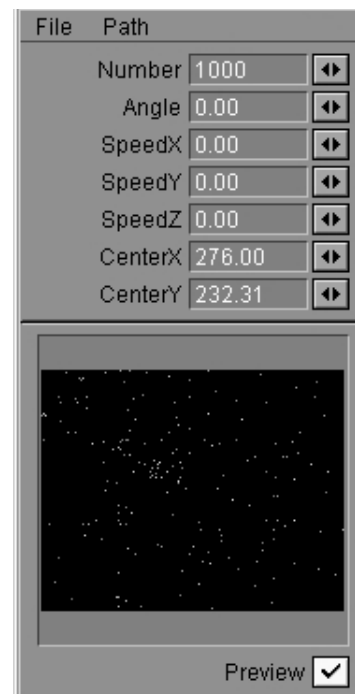
Use the **Direction** pop-up menu to change the direction of the effect.

The **Power** setting adjusts the intensity of the effect.

The distance of the blur is controlled by the **Begin** setting. Lower values result in less blurring and higher values result in more.

StarField

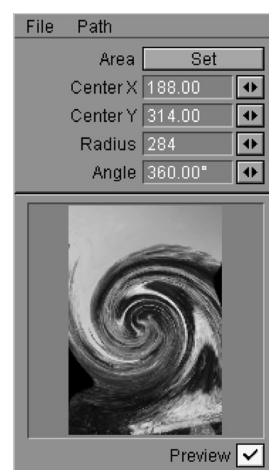
Create a starfield with any brush, such as the air-brush, in the current layer.



Starfield filter

Set the **Number** of stars in your starfield and the **Angle** of star rotation in degrees. You set the speed that the stars fly by on each axis in the **SpeedX**, **SpeedY**, **SpeedZ** fields. The **CenterX** and **CenterY** fields define the vanishing point for the starfield, which is the center from which the stars emerge.

Tornado



Tornado panel with preview

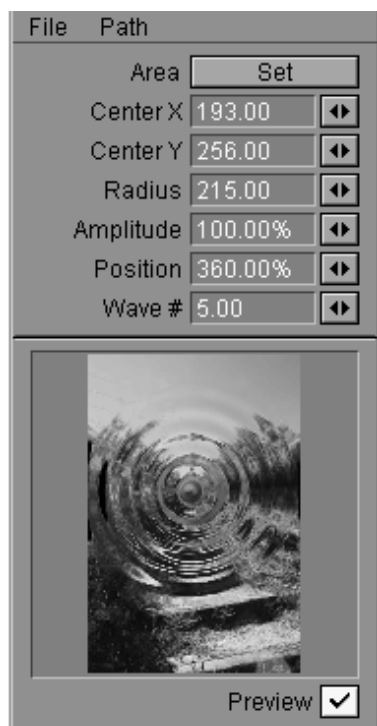
The Tornado filter rotates parts of an image located within a circular area of influence, creating a spiral or tornado effect. Image areas at the edges of the effect are rotated less than areas near its center.

The **Center X** and **Center Y** values represent the coordinates for the center of the area of influence. **Radius** represents the radius, in pixels, of the area of influence. **Angle** determines the amount of rotation applied. Positive values rotate the image in the counter-clockwise direction, and negative values rotate it clockwise.

To choose the area of influence graphically, click the **Set** area button. Move your pointer over the project window. A crosshair appears. Click on the desired center point and drag the mouse to set the radius.

With this filter you can give the image a bizarre twist with a fairly small angle (less than or equal to 45°), or you can roll it around itself in a wild tornado (angle exceeding 360°). Try it out on a pretty face.

Key Waves



Waves panel with preview

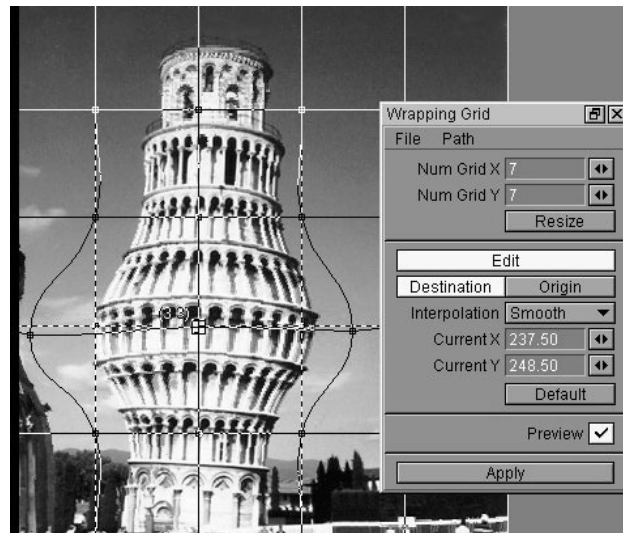
The Waves filter generates concentric waves inside the area of influence. These waves look something like the circular ripples formed when a pebble hits water. You can enter the number of waves and their maximum amplitude. The amplitude of the waves is maximum at the center of the area of influence. Amplitude reduces as distance from the center increases, and becomes zero at the boundary of the area.

The **Center X** and **Center Y** values represent the position of the center of the area of influence. **Radius** represents the radius, in pixels, of the area of influence. **Amplitude** defines the maximum amplitude (height) of waves. **Position** sets the position of the ripples from the center – animating this makes the

ripples move out/in from the center. **Wave #**, which must be between 0 and 100, defines the number of waves created.

To choose the area of influence graphically, click the **Set** area button. Move your pointer over the project window. A crosshair will appear. Click on the desired center point and drag the mouse to set the radius.

Wrapping Grid



Wrapping panel

The Wrapping Grid filter warps imagery on the X & Y axes in the fashion of the proverbial “funhouse mirror.” It may be thought of as a simple morphing application, as well. Pixels are translated spatially and stretched as necessary to provide the desired effect.

Control for the effect is provided by the use of control points at the intersections of vectors subdividing the project window. Where the vectors intersect, control nodes are found. Each of these nodes can be dragged from its **Origin** to a new **Destination** point, warping the imagery in its area of influence as required.

The density of the mesh is set using the **Num Grid X** and **Num Grid Y** fields. Changing the values does not automatically update the mesh, however. To effect the change after modifying the settings, click **Resize**.

To see the mesh and corresponding nodes, click **Edit**. Clicking on **Origin** permits you to move or group nodes closer to important details in the source image by dragging with the LMB. Then, clicking on **Destination** allows you to drag nodes to desired end positions. Try it on a buff body.



HINT If **Preview** is checkmarked, you can view the results of your Destination node editing as you drag.

The **Current X** and **Current Y** fields display the exact position of the currently selected control node. If you wish to restore currently selected nodes to their original position, click **Default**.



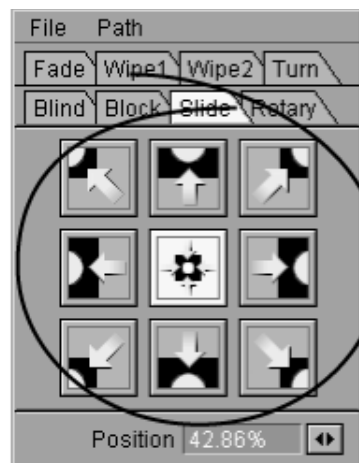
HINT You can edit the position of several nodes simultaneously by first multi-selecting them. To do so, drag out a box surrounding them with the LMB.

The options available using the **Interpolation** pop-up menu include **Spline**, **Linear**, and **Smooth**. These choices control the type of interpolation applied between adjacent nodes. If you drag a single node to a new Destination point, Linear mode warps pixels between the altered node and its immediate neighbors in straight-line fashion. Smooth mode provides a more rounded warp. Spline mode provides the greatest control over the interpolation, using adjustable Bezier curves between nodes. When Spline is selected, clicking on a node reveals spline control handles extending out from it, along the mesh vectors. Dragging these handles with the LMB gives you the ability to create very smooth warp effects.

It is important to note that the position of nodes can be keyframed during an animation. With just a few seconds work adjusting the keyframes of two nodes, you could animate the Leaning tower of Pisa hula dancing!

TRANSITION

Transition Filter



Example of direction icons for Transition Filters

The Transition filter features several wipes and fades, perfect for transitioning from one layer to another. Essentially, the contents of the current layer are removed in a definable way to reveal whatever is underneath. Most of the transitions have directional

options that you set by selecting one of the icons at the top of the panel.

Using the Transition Filters

You can set up all of the transitions in basically the same manner.

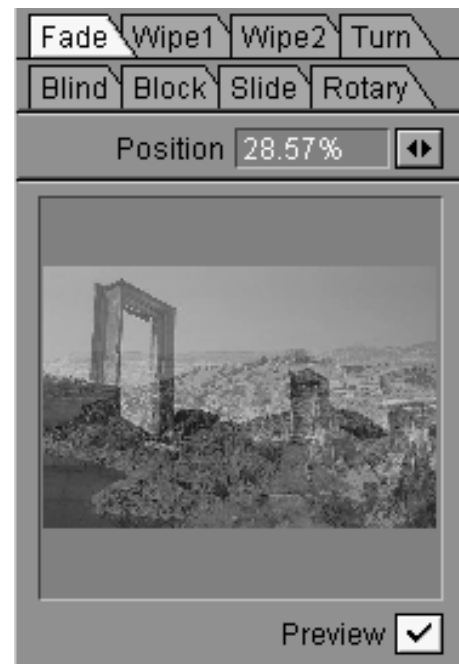
To set up a transition:

1. Go to the frame where you want the transition to start.
 2. Set the **Position** field to the amount of transition you want to start with. Most of the time this will be 0%. A setting of 0% means no change and 100% means total change.
 3. Go to the frame where you want the transition to end.
 4. Set the **Position** field to the amount of transition you want to end with. Most of the time this will be 100%.
- There may be other keyable parameters, but the above sets the basic operation of the transition.
5. Select all of the frames over which the transition occurs and click **Apply Filter**.



NOTE All of the transition modes on the Transition filter share the same parameter keys. So if you set it for one and switch to a different transition, the keys will still be there. Also, not all parameters are **keyable**.

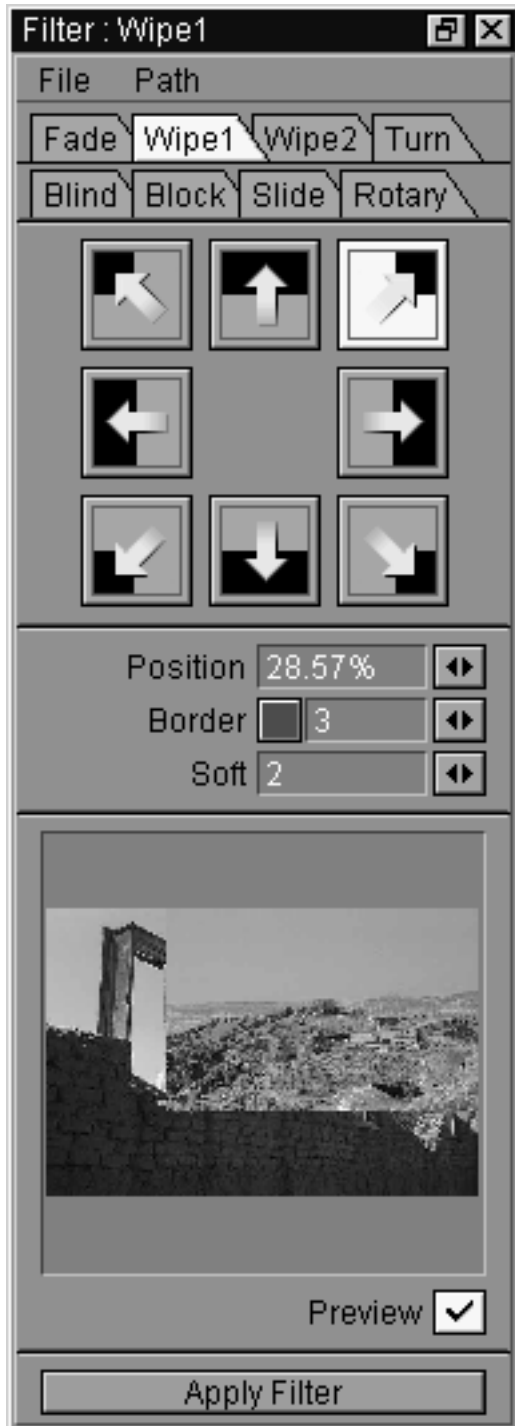
Transition: Wipe Fade



Transition on Fade tab with preview

The Transition Fade filter will dissolve the layer in or out.

Transition: Wipe1



Transition on Wipe 1 tab with preview

The Transition Wipe 1 filter simply wipes the layer on or off using a rectangular shape. You can set a **Border** color and its width in pixels. The **Soft** setting will soften the edge, including the border, when set above 0.

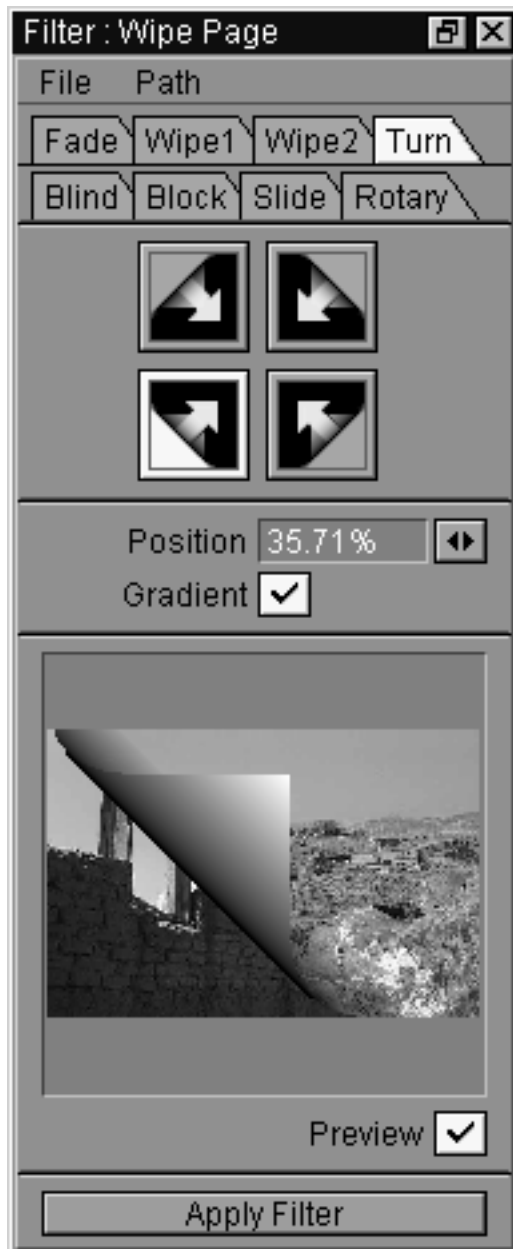
Transition: Wipe2



Transition on Wipe 2 tab with preview

The Transition Wipe 2 filter simply wipes the layer on or off from multiple sides. You can set a **Border** color and its width in pixels. The **Soft** setting will soften the edge, including the border, when set above 0. The **PositionX** and **PositionY** fields define the center of the effect. You can define the center with your mouse by clicking **Set** or you can instantly center by clicking **Center**.

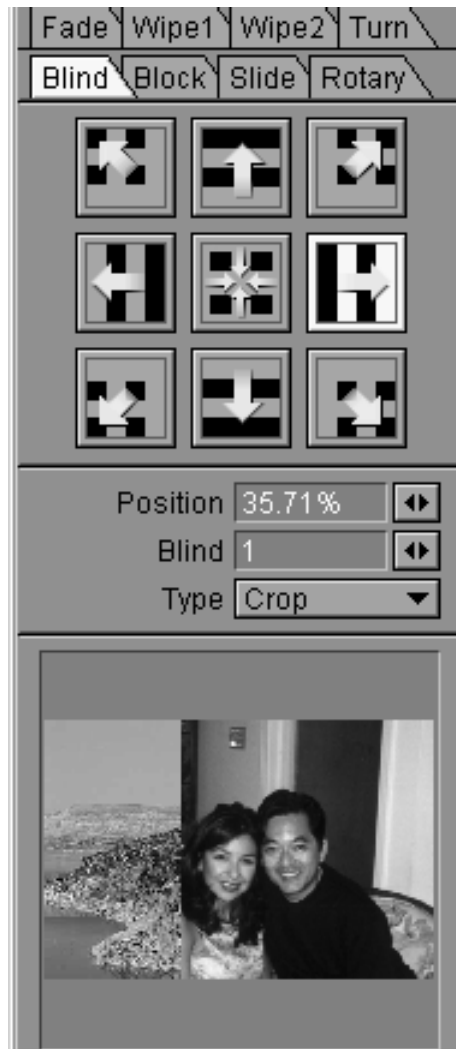
Transition: Turn



Transition on Turn tab with preview

Turn transitions using the classic page turn effect. Activating **Gradient** uses a gradient of the A and B colors to fill the underside of the page. If **Gradient** is not active, the pixels of the turning page will show through.

Transition: Blind



Crop type

Blind transitions using a window blind effect. Set the number of slats using the 3 available **Blind** fields: **Crop** wipes the image on/off without moving the visible pixels; **Slide** moves the entire image on/off; and **Stretch** squeezes/expands the image during the transition.

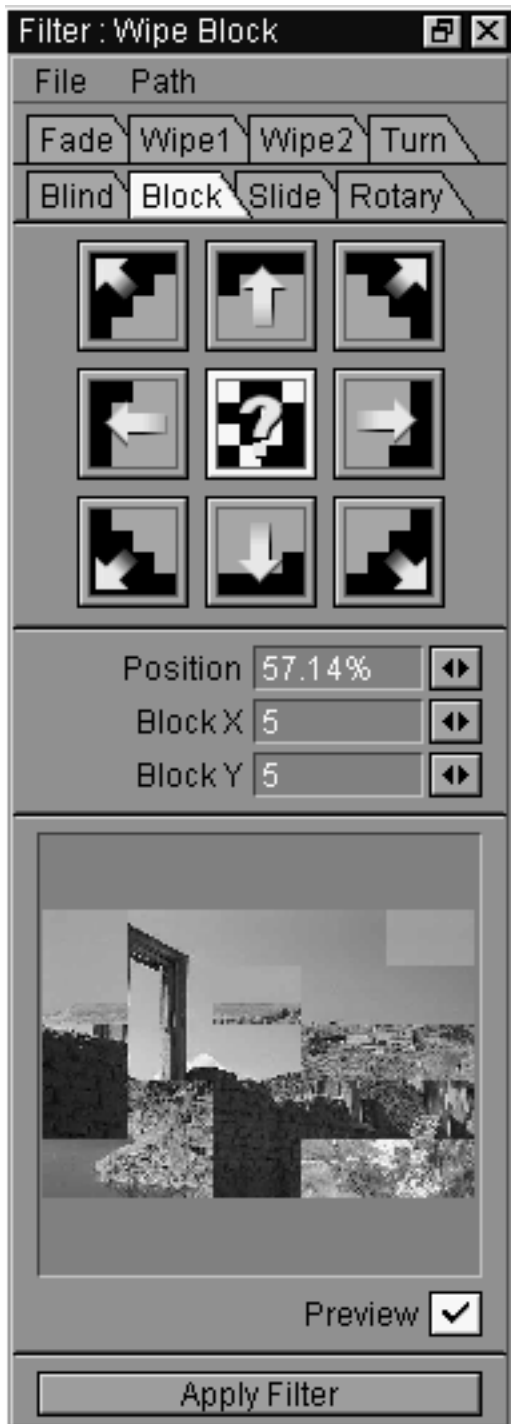


Stretch type



Slide type

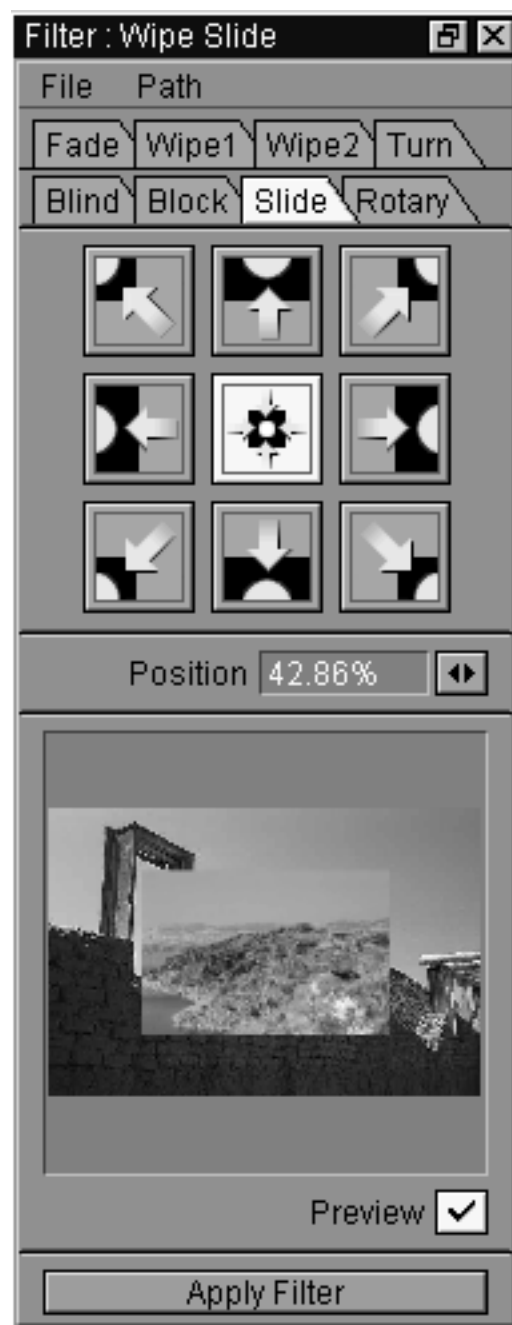
Transition: Block



Transition on Block tab with preview

Block transitions using a building block-like effect. **Block X** and **Block Y** define the number of horizontal and vertical blocks used. The center direction icon adds the blocks in random order.

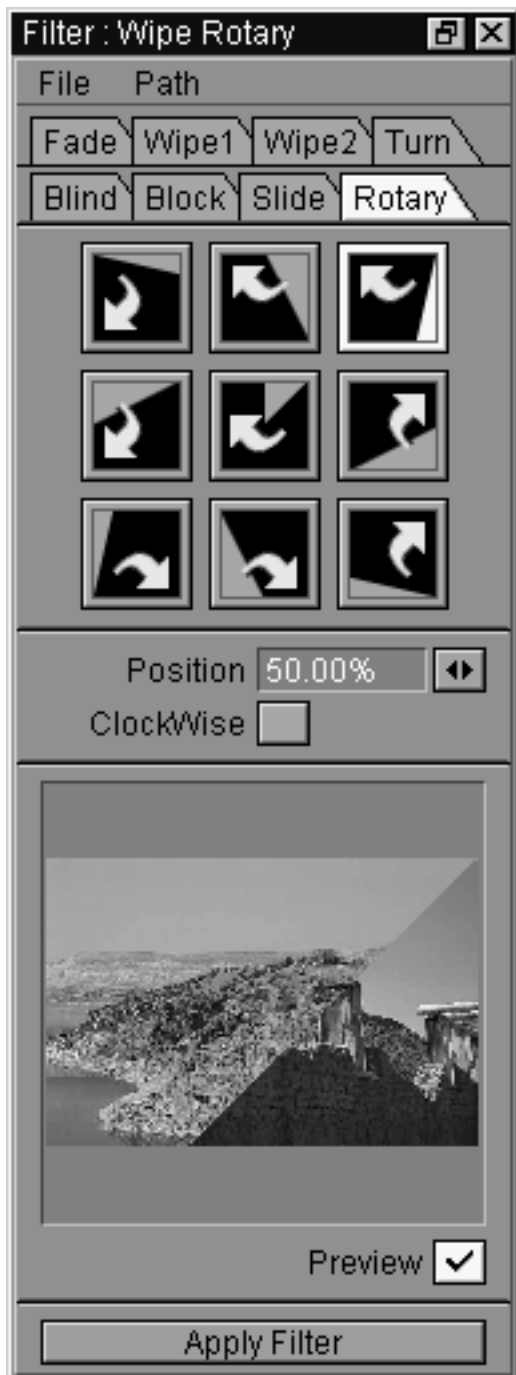
Transition: Slide



Transition on Slide tab with preview

Slide simply wipes the layer on or off using a rectangular shape. This is similar to the Wipe1 transition, but differs in the fact that it moves the image on/off.

Transition: Rotary



Transition on Rotary tab with preview

Rotary wipes the layer on or off in a rotating *swipe*. Use the ClockWise option to reverse the direction of the swipe.

VT Wipe Builder Filter

VT Wipe Builder can be used to create 2D DVEs that can be used in VT [3]. With this transition compiler, you can construct Wipes by controlling the trans-



parency and the position of the incoming video source. In addition, you can overlay an uncompressed video source as a mask. (For detailed instructions, see the tutorial, WipeBuilder.pdf on the Content CD.

VI FILTERS

The VI filters are third-party plug-in filters for George Scripts. Each filter has its own documentation that is supplied in its folder with Aura.

VIDEO FILTERS

Fix Motion

The Fix Motion filter performs two functions: it applies a vertical smoothing effect on computer images for use in video, and smoothes images digitized from a video source. It avoids scintillation effects that can occur when the image is displayed. In video, an image is displayed in two steps; all even lines are displayed first, and then all odd lines are displayed. This is called *interlacing*.

Under normal circumstances, this interlacing of even and odd lines is unnoticeable because it is compensated by image smoothing. But when there are strong contrasts in images (with sudden changes from black to white), interlacing can cause a scintillation effect characteristic of the video signal. Computer images, which are usually sharper, tend to scintillate when they are displayed on a video monitor. Similarly, digitized video images are often *chopped* horizontally when they are displayed on a computer monitor.

This filter solves these two problems. It does this by interpolating data for image fields, which gener-

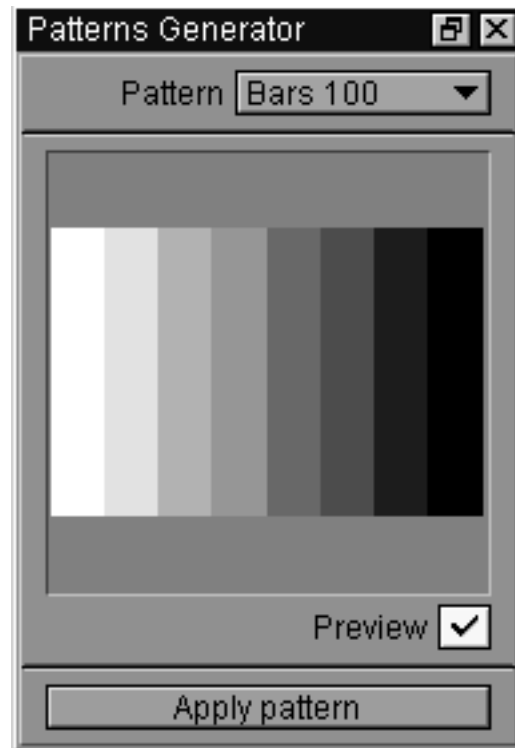


Above: Before
Below: After Mix

ates smoothing of the image in the vertical direction only. A computer image is then more stable when it is displayed in video and a digitized video image becomes coherent once again (sometimes at the expense of more marked smoothing).

The **Duplicate Even** field option will interpolate the data for even lines in a field. **Duplicate Odd** field is the opposite and interpolates data between odd lines in a field. You also can choose the **Mix** mode to combine the fields.

Pattern



Pattern panel with Bars 100 option

Use the Pattern filter to generate video test patterns to the current (or selected) frames. Use the **Pattern** pop-up menu to select from the available patterns for the selected standard. Video test patterns are used to maintain video quality; the descriptions below will briefly introduce you to each test pattern and how it is used.

Bars 100 generates a test pattern of eight colors – white, yellow, cyan, green, magenta, red, blue, and black – at 100 percent saturation; the bars provide a color reference.

Bars 75 generates the same test pattern as Bars 100, except at 75 percent color saturation.

Bars + Pluge generates the Bars 75 test pattern with a pluge pattern, which is used to adjust brightness and contrast in picture monitors.

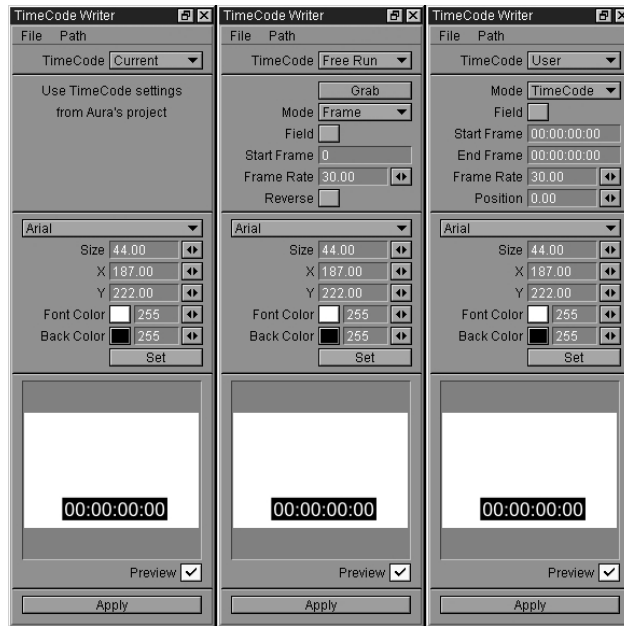
Bars + Red generates the Bars 75 pattern with a band of 100 percent red at the bottom; the red signal is used to test videotapes for dropout and noise.

Bars + SMPTE generates the Bars 75 pattern with the SMPTE pattern, which is used to adjust VCRS and picture monitors.

Gray Step 5 and **Gray Step 10** generate test patterns of five or ten equal steps of grays; these patterns help test luminance.

Gray Ramp generates a ramp of gray values from 0 to 100 IRE that is used to test luminance. (IRE is a unit of measurement used to standardize video and broadcast signals.)

TimeCode Writer



TimeCode Writer from left to right: Current, Free Run and User

TimeCode writer inserts a rectangle with timecode over a layer. The rectangle becomes a permanent piece of the layer, so if you plan to remove it later, you should place it on its own layer, not in a layer with paint.

Time Code writer offers three modes: **Current**, **Free Run**, and **User**. **Current** applies the timecode value from the current project; this mode has no settings.

The **Free Run** mode lets you choose specific project settings. The **Grab** option grabs the timecode settings from the project. Then you set the display Mode, which can be **Frame** or **TimeCode**. Frame will display a count by frame (0, 1, 2, etc.) and TimeCode uses SMPTE display (00:00:00:24.1).

When you check the **Field** option, the display adds a .0 or .1 at the end of the current TimeCode to indicate the field number. **Start Frame** defines the frame where the TimeCode starts. **Frame Rate** is the speed of TimeCode measured in frames per second. Check **Reverse** to view TimeCode as time remaining in project.

The **User** mode lets you set the frames where you want the TimeCode to begin and end. The display Mode can be Frame or TimeCode. Frame will display a count by frame (0, 1, 2, etc.) and TimeCode uses SMPTE display (00:00:00:24.1). The remaining options are the same as those for Free Run mode.

The options in the lower part of the panel are available in all three TimeCode modes. When you've made the changes you want, click the **Set** button.

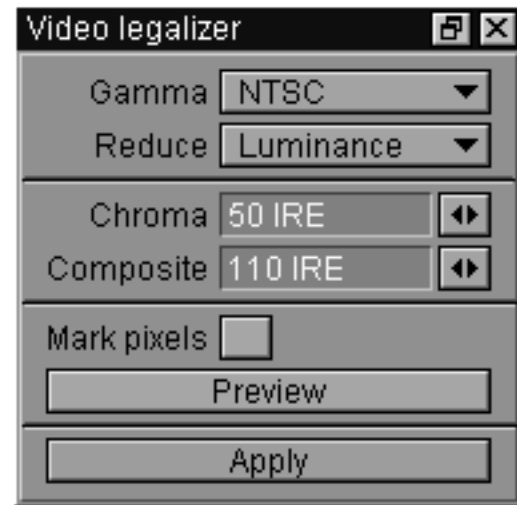
You can set the TimeCode **Font** using fonts

installed on your system. **Size** changes the size of the rectangle and the font size. You enter the screen coordinates for the TimeCode position in the **X** and **Y** fields.

Font Color applies a color to the TimeCode numbers; you can set an alpha value in the adjacent text field. A value of 0 is transparent and 255 is opaque.

Back Color sets the TimeCode background color, and again you can set an alpha value as explained above.

Video Legalizer



Video Legalizer panel

The Video Legalizer filter scans for pixels with unsafe values of chrominance signal or composite signal amplitude when encoded into a color video signal. Such illegal pixels can be corrected by reducing their Luminance or Saturation (Reduce pop-up menu). The **Composite** and **Chroma** values set the maximum composite signal and chroma amplitudes, respectively. The default values, 110 IRE (Composite) and 50 IRE (Chroma) are the RS-170A video specifications.

You can see what effect the filter will have on the current frame by activating the **Preview** button. If you also activate **Mark pixels**, the affected pixels will be shown with 0 opacity and, thus, you will be able to see the background/layers underneath. This effect is only for preview purposes and the option has no effect when the filter is actually applied.

Video Legalizer filters only the current (or selected) frames in the current layer when applied, so you should use it only as the final step after you have merged all layers.

Waveform

The Waveform filter simulates a composite or component waveform monitor or a vectorscope. The pop-up menu in the top-left corner sets the type.

This filter interprets the combined layers for the current frame, so it is unnecessary to merge layers.

You can choose different display options for the Waveform monitor. For **Composite WF**, choose to display the full **YC** signal (luminance and chrominance, respectively), or just the **Y** or **C** portion. For **Component WF**, choose between **RGB** and **YUV**.

When you set the panel to **VectorScope**, you must set the **Scale** to match the input. Usually, the input is 75% color bars so scale should be 75% also.

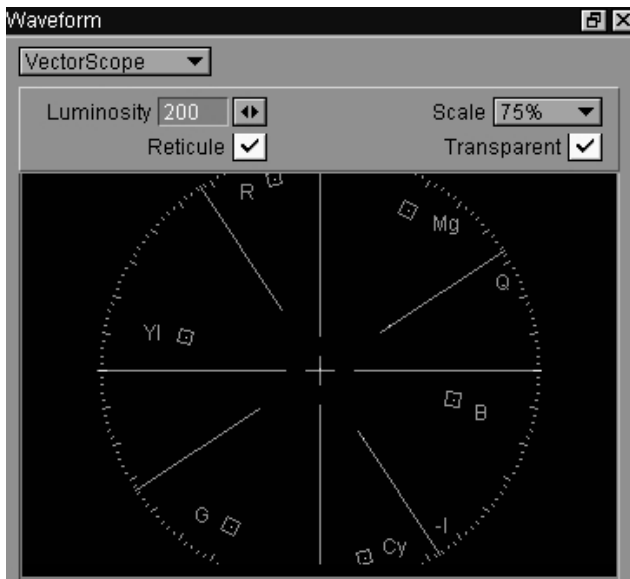
The default **Luminosity** values for **Composite WF**,

Component WF and **VectorScope** are 50, 100 and 100, respectively. This basically allows you to adjust the intensity of the display.

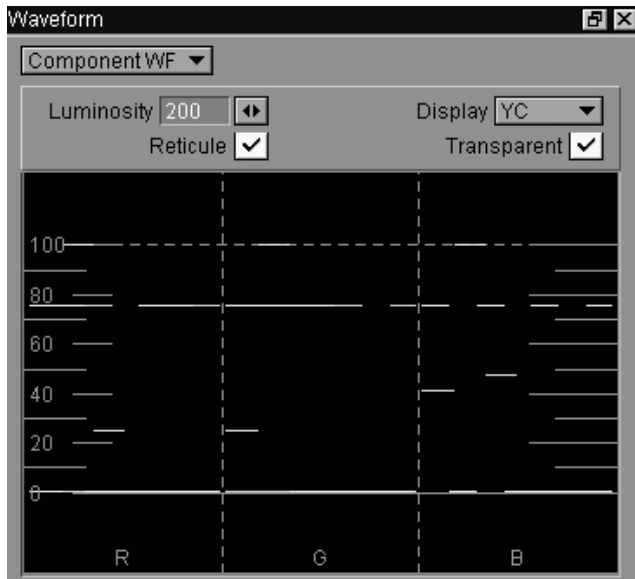
The **Reticule** toggle lets you choose whether or not to render the reticule in your project if you apply the waveform. The reticule is the graph that measures the signal, which uses an area chart when you work with the Waveform, and a circular chart when you work with a Vectorscope.

The **Transparent** toggle lets you render the waveform over a transparent background when you select this option. When you deactivate Transparent, you render the waveform over a black background.

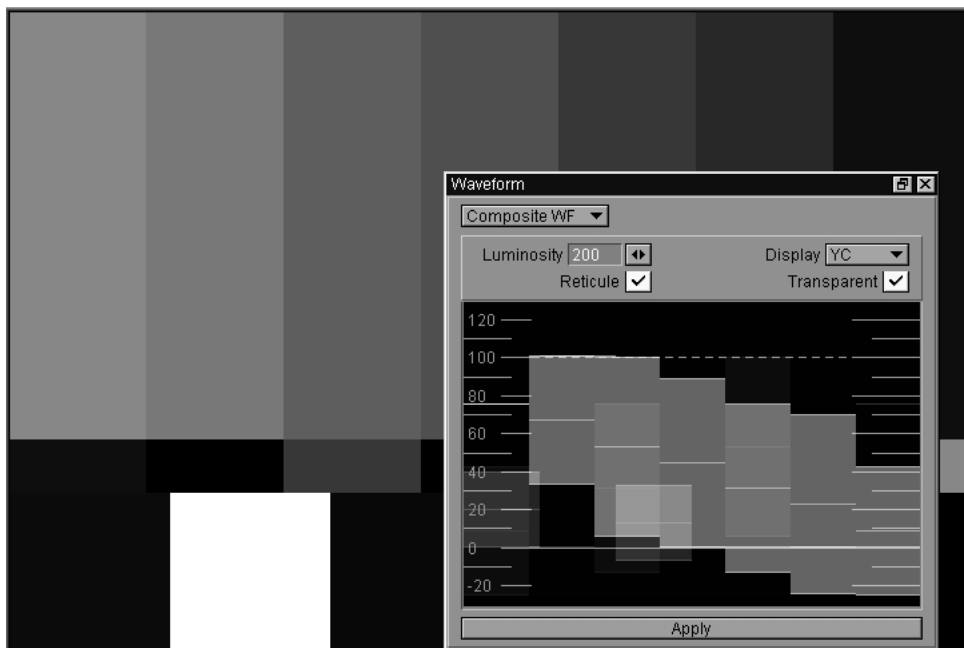
The **Apply** button at the bottom of the screen lets you render the WaveForm monitor in your current project.



Vectorscope



Component waveform



Composite waveform

Notes:



Chapter 9:

George Macros

WHAT IS GEORGE?

George is a macro scripting language that you can use to control Aura. It is an *automatic pilot* that sends instructions such as *select this function*, *use this color*, *draw this*, etc. to Aura. Each instruction corresponds to an Aura function or icon. Everything takes place as though George was clicking the icon in the interface for you. Rather than clicking ten or twenty times on the same button yourself, simply ask George to do it for you.

You can use existing George scripts or you can create your own. With George, you can create an infinite number of custom drawing functions and automate the use of Aura. Many example scripts are included with Aura; these are stored in the George subdirectory. You can read descriptions for each of the example George scripts by double-clicking the script name. A dialog appears that asks you if you would like to read instructions; select **Yes** and the instructions appear on a panel.

The George language is documented in the Software Developers Kit (SDK) on the Aura CD. The SDK contains the complete list of current George commands and examples for how to use them.

Suppose that you wanted to draw a glass ball. To do this, you would need to cutout a custom brush (for the reflective surface), set the parameters to apply this brush in a circle, draw a filled circle (which will be filled with the brush), adjust opacity mapping parameters to obtain a reflection, select white and redraw the circle.



The George panel with scripts and associated launching modes

If you had to create only one of these balls, you could execute the operations manually. However, what if you needed 10 or 20 glass balls. It would likely get pretty tedious – this is where George comes in. With the proper program, all you have to do is to draw a circle to define the contours of the ball and George will do the rest for you. (What a guy.)



NOTE George programs are basically plain ASCII text files. You can use any text editing program (e.g., Microsoft Notepad) to create and edit them.

LAUNCHING MODES

Each George program uses a launching mode indicated by a small icon adjacent to the corresponding line on the George panel. Essentially, the icon indicates the drawing actions from which the script derives information.

F+ **None** mode: You do not need to draw anything before using this type of George program. The program does not receive any parameters.

+ **Single** mode: You draw a dot in the image to run the program, which receives a character string containing the word *Single*, a pair of coordinates (x, y) and a code identifying which mouse button you pressed (0 for left and 1 for right). Each parameter in this string is separated from the previous parameter by a space.

S **Continue** mode: You draw a freehand line in the image to run the program. Each time you move the mouse, the program receives a character string containing the word *Continue*, a pair of coordinates (x, y) and the code identifying which button you pressed. Each parameter in this string is separated from the previous parameter by a space. The program can store the coordinates as it receives them, and for example, may execute them when it detects that you released the button.

— **Line** mode: You draw a straight line in the image to run the program. The program receives a character string containing the word *Line*, two pairs of x and y coordinates (the start and end of the straight line) and the code for the button that you pressed. Each parameter in this string is separated from the previous parameter by a space.

▭ **Rectangle** mode: You draw a rectangle in the image to run the program. The program receives a character string containing the word *Rectangle*, two pairs of x and y coordinates (the opposite corners of the rectangle) and the code for the button that you pressed. Each parameter in this string is separated from the previous parameter by a space.

○ **Circle** mode: You draw a circle in the image to run the program. The program receives a character string containing the word *Circle*, a pair of x and y coordinates (the center of the circle), the radius and the code for the button that you pressed. Each parameter in this string is separated from the previous parameter by a space.

USING A GEORGE SCRIPT

Choose **Windows > George panel** from the main menu to bring up the George panel. On the All tab, a scrollable list appears of all of the provided George scripts in your George subdirectory.



Selecting a George script on the George panel



NOTE This list is updated each time you start Aura.

To use a script, simply select it in the window with your mouse and it is highlighted. The launching mode icon appears on the right side; the icon indicates what you must draw to execute the script. For example, if you select a script that shows the Line icon, just draw a line on your project window. The script continues executing once you release the mouse button.

Press the **Esc** key to pause or terminate an executing script.

George Bin

The Bin tab of the George window contains a customizable list of George scripts. You can add and delete scripts from the list as well as load and save user-defined groups of scripts.

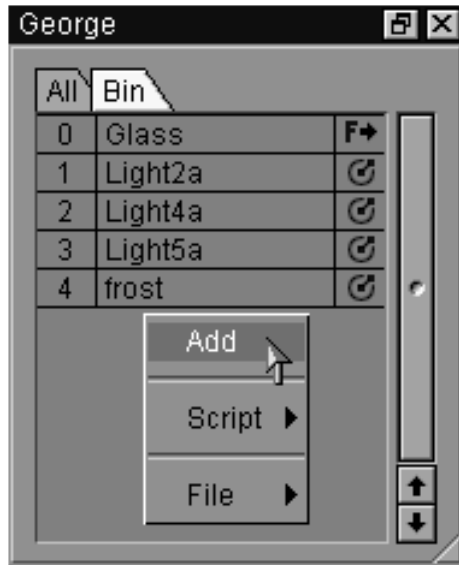
Click your RMB on the blank area at the bottom of the list to display a special pop-up menu.

Choose **Add** to add a script using its filename. Choose **Script** to add a script from the list on the All tab. Choose **File > Save** to save the group of scripts on the Bin tab. Choose **File > Load** to load a previously saved script group. Use this feature to group programs by function or according to your preferences. (The **Default** option will load the default group of scripts called command.agc stored in the Aura directory, if it exists.)

If you click your RMB directly on an item in the list, a different menu appears.

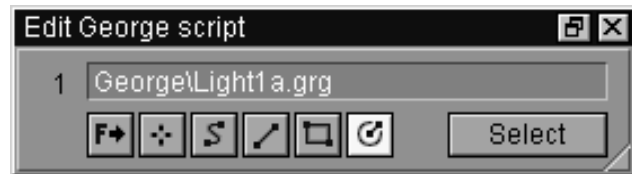
Selecting **Edit** displays the Edit George Script

panel, discussed below. **Remove** will remove the item from the list. The **File** options operate as above.



RMB Pop-up on the George panel

The Edit George script panel contains the path and filename of the file currently associated with the script line. To change the file, simply edit the input field. You also can click the **Select** button and choose another program using a file requester. By default, only files with the .grg extension are shown.



Panel to edit George script

THE STARTUP SCRIPT

Every time you run Aura, it attempts to execute the startup.grg program in the George directory, if one exists. This allows you to customize all working parameters using a George program (e.g., load a background image or your personal color palette, adjust color cycles, the envelope and the power of the airbrush, or the opacity curve, etc.).

THE GEORGE LANGUAGE

If you want, you can write your own scripts or modify the provided scripts to suit specific needs. George is a very rich programming language and even borrows many features from higher level programming languages like C, including loops, conditional tests, and calculations.

Language Conventions

Variables

George manages numeric and character string variables transparently. You do not need to declare variable types before using them. Thus you can write:

```
a = 3
MyVariable = "Monday"
```

Additionally, variable names are not case sensitive. Thus, George interprets PRINT, Print, PPrint and PriNt as all the same.

Reserved Variables

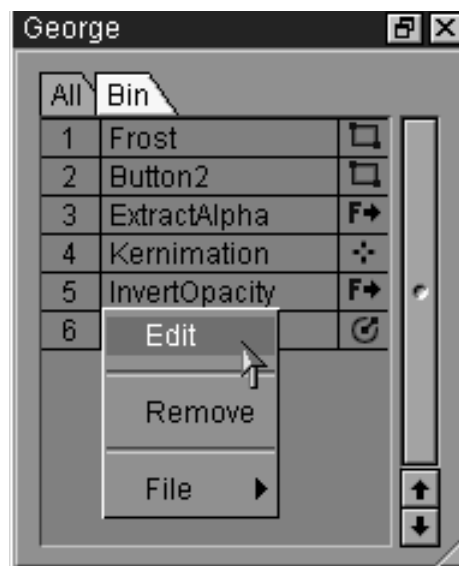
Some variable names are reserved for George. These variable names may be modified at any time without warning. You can read these variables to see what they contain, but it is strongly recommended that you do not write into them. An example is the George *Result* variable that is used in particular to store the results of Aura commands.

Program Line

You can include only one instruction on any one line. For example, the following is an example of what you cannot write:

```
PRINT "Hello" PRINT "see you tomorrow .."
```

Like variable names, instruction and command names are not case sensitive. Thus, George interprets Tv_AliasOn, tv_aliaSon and TV_aliasON as all the same.



RMB Pop-up from the George item list

If the file you chose is a George program, the icon corresponding to its launching mode is automatically selected. If it is a system program, you can choose the appropriate launching mode or you can deselect all icons to start without a parameter.

Close the panel to return to the George panel. The selected program name and start mode appear on the script line.

George Instructions

For better readability, George instruction lines can start with the “#” character. Thus you can write:

```
#PRINT “hello”
```

instead of

```
PRINT “hello”
```



NOTE Do not confuse lines to be used by George (which can start with the # character) and Aura command lines (which all start with tv_). Lines to be used by George form the program structure (loops, tests, calculations, etc.), whereas lines that contain Aura commands affect Aura panels and screens.

Remarks

Two slashes will *remark out* whatever follows. This allows you to add comments to your code.

```
//PRINT “hello” will not write anything  
PRINT “hello” // actually writes “hello”
```

Arithmetic operators

-	negative
**	exponent
*	multiplication
/	division
+	addition
-	subtraction

Relational operators

==	equal to
!=	not equal to
>	greater than
>=	greater than or equal to
<	less than
<=	less than or equal to



NOTE Do not confuse the assignment operator = and the comparison operator ==. The former is used to assign a new value to a variable (like a=a+1) whereas the second is used to compare two expressions (like a==b) during tests.



NOTE You must use the CMP instruction to find out if two character strings are identical. Do not use the equality operator (==).

Logical operators

&&	and
	or

Character Strings and Tables of Variable

Character strings

All character (text) strings must be written between double quotation marks (“”) or between single quotation marks (‘’). When you want to use either of these

two quotation characters in a string, you must use the other quotation character to surround it (for example, “It’s finished !” or ‘The program name is “Aura” ‘).

You can process numeric values like string values in operations such as concatenation (joining several strings together). For example:

```
PRINT “The result is “value
```

Use the CONCAT instruction or the empty character string (“”) if you want to concatenate two strings, in other words join them together one behind the other. The following two lines:

```
CONCAT(string1,string2)
```

and

```
string1””string2
```

produce the same result.

If you want to concatenate these two strings and separate them by a space, you can write:

```
string1” “string2
```

If you want to increment the numeric part of a character string (for example a file name) you can write:

```
FOR i = 1 TO 10
```

```
name = base””i””// base is the base name
```

```
PRINT name // base1, base2, etc.
```

```
END
```

Arrays

You can create variable arrays in George in the form var[i] or var(i), where i is a numeric value indicating the position of the required element in the table, and “var” is the generic name of the variables in the array. There is no need to make a prior declaration for the dimension (the number of elements) in these tables because they are created dynamically. These arrays may contain several dimensions (for example var[i,j] or var(i,j) for a table with two dimensions).

Example:

```
day[1] = “Monday”
```

```
day[2] = “Tuesday”
```

```
day[3] = “Wednesday”
```

```
FOR i = 1 TO 3
```

```
PRINT day[i] //displays “Monday”,  
“Tuesday”, “Wednesday”
```

```
END
```

PROCEDURES

A procedure is an independent part of a program that is called from the main program and that carries out some processing on the data in the program. A procedure can repeat a set of operations without the need for you to duplicate the corresponding lines in the program. Simply create a procedure, and then call it from the main program. Procedures are recursive, so a procedure can call itself.

There is no need to know exactly how a procedure

works. All you need to know is the type of data that it needs and the type of data that it will return to the main program.

All procedures must be placed after the end of the main program, although, their order is not particularly important. You can use any George instructions and any Aura commands in a procedure.

Procedure Declaration and Call

Use the FUNCTION instruction to declare a procedure. You must state the name of the procedure and the names of the variables transferred to the procedure, after the FUNCTION instruction. The procedure must end with an END instruction. Therefore the general form of a procedure is:

```
FUNCTION name(var1,var2,...,varN)
    (instructions in the procedure)
END
```

The procedure can access any of the variables declared in the main program at the time that the procedure is called. The main program will recognize any new variable declared in the procedure, after returning from the procedure. You can also create variables that will be recognized only in the procedure, by using the LOCAL instruction. Use the RETURN instruction to return a value to the main program.

Procedure "name" is called from the main program as follows :

```
name(var1,var2,...,varN)
```

The number of variables transferred must be exactly the same as the number of variables expected by the procedure. If the procedure returns a result, you can store it in a variable, or test it, and so on.

Procedure Instructions

FUNCTION

Syntax: FUNCTION Dothis(var1,var2,...,varN)
 (*instructions*)
 END

Declare a procedure named Dothis, which expects variables var1,var2,...,varN. Note that var1,var2,...,varN are the names by which the received variables are known in the procedure.

Examples:

```
FUNCTION Counter(number)
    LOCAL I
    IF (i > 0)
        FOR i = number TO 0 STEP -1
            END
            RETURN "Countdown finished"
        ELSE
            RETURN "Countdown impossible"
        END
    END
END
```

Example calls to this procedure from the main program:

```
PRINT Counter(100)
```

or

```
var = 100
a = Counter(var)
PRINT a
```

RETURN

Syntax: RETURN expression

Returns the value expression to the main program.

This instruction is not compulsory in a procedure.

Examples:

```
RETURN 0
RETURN "End of procedure"
RETURN var
```

LOCAL

Syntax: LOCAL var1 var2 ... varN

Declares one or several local variables in the procedure. These variables are available (in other words recognized) only within the procedure. Example:

```
LOCAL day1 day2
```

INCLUDE

Syntax: #INCLUDE "file"

Declares a file to be inserted in the current George program. Example:

```
#INCLUDE "include\basic.grg"
```

When the George command interpreter meets a line containing this command, it replaces it by the contents of the specified file. This allows you to create function libraries and include them in your George programs.

To access the specified file, George gives priority to two search directories: the Aura home directory (mentioned in the "HomeDir" line in the "Aura2.ini" file) and the directory containing the George program in which the INCLUDE instruction was given.

From these base directories you can specify an access path for the file to be included (for example, #INCLUDE "library\strfunct\strlib.grg"). If the file to be included contains procedures (see the FUNCTION instruction above), you must place the INCLUDE line after the end of the main program. You will find two examples of function libraries for the processing of character strings ("Basic.grg" and "Advanced.grg") in the "George\Include" directory of Aura.

GEORGE INSTRUCTIONS AND AURA COMMANDS

George *Instructions* are special functions, like Rnd() and Tan(). Aura commands are the command lines you use to execute Aura operations. These are listed and explained in HTML format on the Aura CD-ROM.

Notes:



Appendix

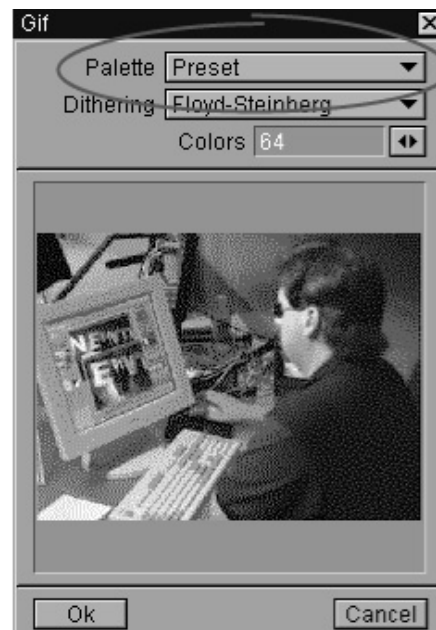
FILE FORMATS

Select a save format for your files using the Mode pop-up list in the Aura File menu. You can read a description of how to use this menu in Chapter 2. This appendix describes the different file formats and the options available for each of these formats.

Indexed Color Palettes and Dithering

Some file formats use indexed color palettes exclusively or offer this option. This means that every pixel in the image *points* to a color in a defined set of colors. The total number of colors can be 256 (8-bit) or less. (If you could change a color on the palette, all of the pixels that pointed to it would change.) This differs from a true color format, where the color for each pixel is determined independently, usually using 24-bits of information, allowing over 16 million different possible colors. There can be up to four indexed color options available on the **Palette** pop-up menu that appears on many file format mode panels.

Preset uses a pre-defined palette containing different shades of red, green and blue. **User-defined** uses the 256-color palette that is currently on the Bin tab of the Color Picker panel. **Global quantized** computes an optimum palette that it uses for all images in a sequence. (When you save using this option, it may take a little longer, since the program has to examine



Dithering option on the GIF panel

all the images in the sequence to determine this palette.) With the **Local quantized** option (animation file formats only), Aura uses one palette for each frame, which can be different.

The **Dithering** pop-up menu gives you the option of using the **Floyd-Steinberg** (error diffusion) or **Standard** (available only with **Preset** Palette) dithering techniques to give the illusion that there are more than 256 colors in the image. Choose **None** to deactivate dithering.



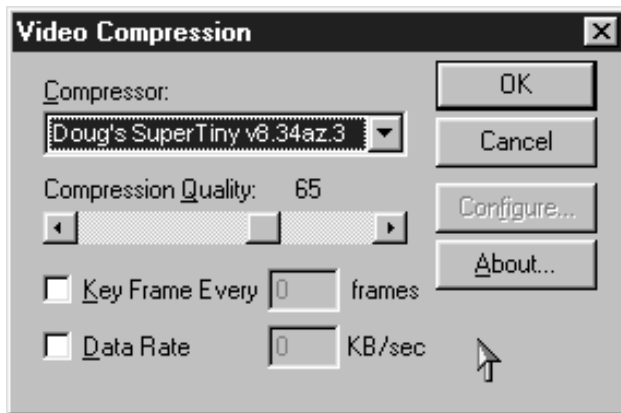
NOTE As you change the **Palette** or **Dithering** settings, the preview window will adjust accordingly.

Set **Colors** to the number of colors you want to use out of the 256 color palette. It can vary between 16 and 256.

Aura format (.aur)

The Aura format is specific to Aura and there are no settings for it. It is used only by the project, palette and mixer files.

AVI format (.avi) (Video for Windows)



System dialog box for Video Compression

The AVI format saves an animation as a single file or a single image that you can then display afterwards, for example, using the Windows® Multimedia® player. The number of colors saved depends on which compression method you use. A system dialog box appears after you have entered the file name to be saved.

The **Compressor** pop-up menu contains the names of the compression/decompression algorithms (codecs) currently installed on your system. This will vary from system to system. Compression is essentially the process of reorganizing and eliminating data to reduce the required data transfer rate (and file size) necessary to playback and store video (animations).



NOTE The available options vary depending on the Compressor selected. As such, some options on the panel may be ghosted.

Compression Quality determines the final image quality. A high value provides a better quality image with less compression, but increases the resulting file size.

The **Key Frame Every** option sets the number of full images that will actually be saved in the file (this

does not affect the animation playback rate). This is available for codecs that support delta compression. If you set the value to 10, every tenth frame is stored in its entirety. Only the changes (i.e., delta) between frames are stored for other frames. If you do not activate this option, every frame is a key frame.

Data rate sets the maximum allowed data transfer rate. The quality of the video is automatically adjusted to achieve the specified data rate.

Configure accesses another dialog box, if any, containing settings specific to the chosen compressor.

Make the desired settings and then click on **OK** to save the AVI file.

Cineon (.cin)

The Cineon file format is a 10-bit per channel logarithmic image format originally designed by the Eastman Kodak Company for use with its line of film scanners and recorders.

DEEP format (.dip)

The DEEP format saves an animation or a single image in 32 bits (16 million colors with 8-bit alpha-channel). This is a fast and compact proprietary format specific to Aura. There is no settings panel for this format.

FLC format (.flc)

This format is used to save an animation as a single file or a single image in 8 bits (256 colors). See the previous discussion on *Indexed Color Palettes and Dithering* for information on the **Palette** and **Dithering** pop-up menu options.

FLYER CLIP format (.fly)

The Flyer Clip format is used to save an animation as a single file for use with NewTek's VideoToaster Flyer. Generally, your project size should be 752 x 480.

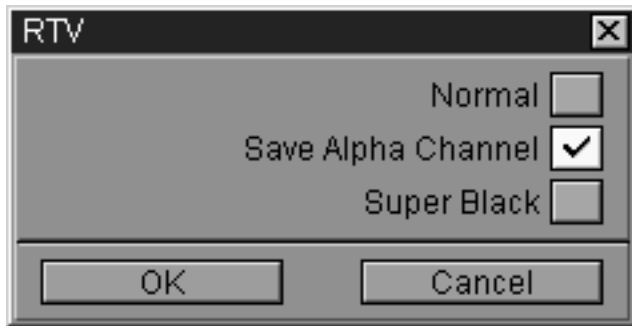
GIF format (.gif)

The GIF format is used to save an animation as a single file or a single image in up to eight bits (256 colors). See the previous discussion on *Indexed Color Palettes and Dithering* for information on the **Palette** and **Dithering** pop-up menu options.



NOTE With this format, Aura defines all transparent areas of the image as using the GIF transparent color. This is not a variable transparency, but rather a transparency mask (an area is either completely opaque or completely transparent). When you load a GIF file, Aura will take into account the transparency color areas, if they exist.

D1 RTV



Options on the RTV panel.

The D1 RTV format is used to save an animation as a single file for use with NewTek's VT[3]. Generally, your project size should be 720 x 486 for NTSC and 720 x 576 for PAL.

If you save RTV files with **Save Alpha Channel**, you maintain masking or transparency. Or you can save without the alpha channel using **Normal**.

If you save the file with **Super Black**, it is similar to saving with an alpha channel. Super Black provides good hard edges on video elements.

BMP format (.bmp)

The BMP format can save a single image or a sequence of numbered images in 24 bits (16 million colors) or 8 bits (256 colors). See the previous discussion on *Indexed Color Palettes and Dithering* for information on the **Palette** and **Dithering** pop-up menu options. You will have the additional choice of using the **24 bits** option, which saves images using over 16 million colors. No dithering options are available with this mode and the number color is fixed at 16M(illion).

ILBM format (.iff)

The ILBM format, standard for the Amiga computer, can save a single image or a sequence of numbered images in 24 bits (16 million colors) or 8 bits (256 colors). See the previous discussion on *Indexed Color Palettes and Dithering* for information on the **Palette** and **Dithering** pop-up menu options. You will have the additional choice of using the **24 bits** option, which saves images using over 16 million colors. No dithering options are available with this mode and the number color is fixed at 16M(illion).

JPEG format (.jpg)

The JPEG format saves a single image or a sequence of numbered images in 24 bits (16 million colors). Its settings panel contains a single setting, the **JPEG Ratio Quality**. This setting affects the

quality of saved images. As this value increases, file size increases and image quality improves. This can be set between 1 and 100.

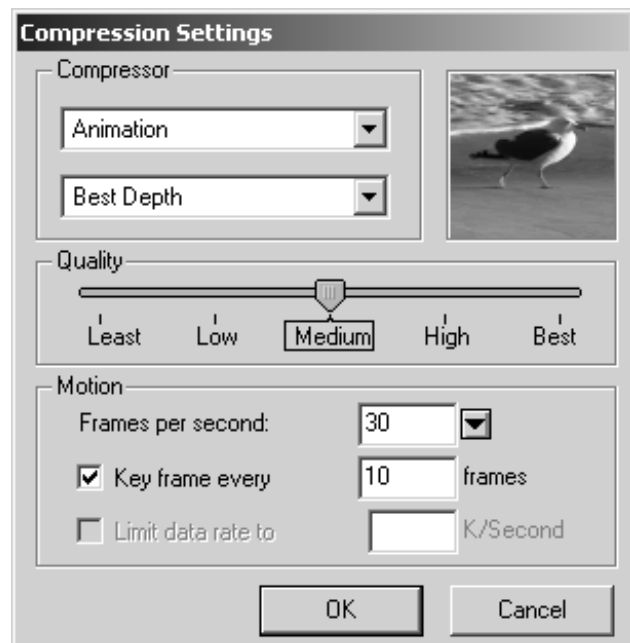


Options on the RTV panel

PCX format (.pcx)

The ever-popular PCX format can save a single image or a sequence of numbered images in 8 bits (256 colors). See the previous discussion on *Indexed Color Palettes and Dithering* for information on the **Palette** and **Dithering** pop-up menu options.

Portable Network Graphics format (.png)



Panel for compression settings for QuickTime

The PNG format saves a single image or a sequence of numbered images in 8-, 24-, or 32 bits (16 million colors with 8-bit alpha channel). This format can give very attractive compression ratios and it is particularly suitable for images that will be transmitted by network or modem (Internet, remote update system, etc.). See the previous discussion on *Indexed Color Palettes and Dithering* for information on the **Palette** and **Dithering** pop-up menu options. No dithering options are available for the 24- or 32-bit modes.

Photoshop format (.psd)

The Photoshop format saves a single image or a sequence of numbered images in 32 bits (16 million colors with 8-bit alpha channel). This is the file format native to Adobe® Photoshop. Layers are preserved as are their individual opacity settings, if the file is loaded as a project; otherwise, the layers are merged. There is no settings panel for this format. Note that Aura's PSD format is compatible only with Photoshop 5.0 and 5.5.

Quantel® format (.vpb)

The VPB format can save a single image or a sequence of numbered images in 24 bits (16 million colors). This file format is native to Quantel® Video Paintbox®. Aura merges layers when you export as VPB, however Aura supports VPB with a Stencil layer. There is no settings panel for this format.

QuickTime format (.mov)

The QuickTime format saves an animation as a single file or a single image that you can then display afterwards, using the QuickTime Player. The number of colors saved depends on which compression method you use. A system dialog box appears after you have entered the file name to be saved.

The **Compressor** drop menu contains the names of the compression/decompression algorithms (codecs) currently installed on your system. This will vary from system to system. Compression is essentially the process of reorganizing and eliminating data to reduce the required data transfer rate (and file size) necessary to playback and store video (animations).



NOTE The available options vary depending on the Compressor selected. As such, some options on the panel may be ghosted.

Best Depth specifies the number of colors to use in the final image. Your options range between Black and White up to Millions of Colors+.

Quality determines the final image quality. Best provides a high quality image with less compression, but increases the resulting file size. While Least gives a low quality image with high compression, and therefore a smaller file size.

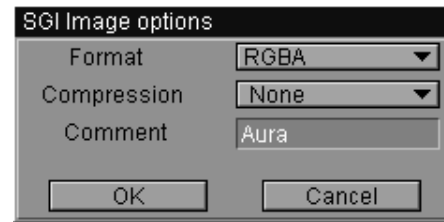
Under the Motion options, you can set the number of **Frames Per Second**, which determines the speed at which your final animation plays.

The **Key Frame Every** option sets the number of full images that will actually be saved in the file (this does not affect the animation playback rate). This is available for codecs that support delta compression. If you set the value to 10, every tenth frame is stored in its entirety. Only the changes (i.e., delta) between frames are stored for other frames. If you do not activate this option, every frame is a key frame.

Data rate sets the maximum allowed data transfer rate. The quality of the video is automatically adjusted to achieve the specified data rate.

Choose your settings and then click on **OK** to save the QuickTime file.

SGL Image format (.rgb)

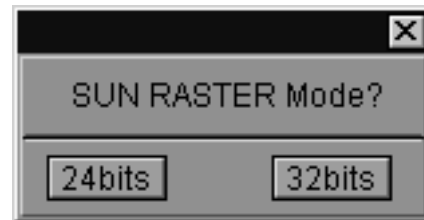


Panel for SGI options

The SGI Image format can save a single image or a sequence of numbered images in 32 bits, **RGBA** mode, (16 million colors with alpha-channel) or 24 bits, **RGB** mode, (16 million colors without alpha-channel). Set the **Compression** pop-up menu to **RLE** to use compression when saving the file. Use **None** for no compression. You can enter optional text in the **Comment** input field, like the author's name. **SoftImage format (.pic)**

The SoftImage format saves a single image or a sequence of numbered images in 32 bits (16 million colors with alpha-channel). There is no settings panel for this format.

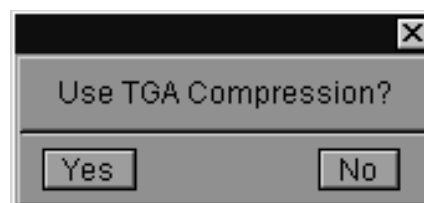
Sun Raster format (.ras)



Panel for Sun Raster options

The Sun Raster format saves a single image or a sequence of images numbered in **32 bits** (16 million colors with alpha-channel) or **24 bits** (16 million colors without alpha-channel).

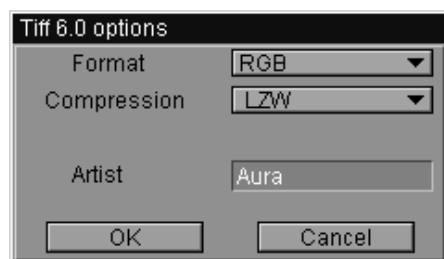
Targa format (.tga)



Panel for TGA options

The Targa format saves a single image or a sequence of digitized images in 32 bits (16 million colors with alpha-channel). Images may or may not be compressed.

TIFF format (.tif)



Panel for TIFF options

The TIFF format saves a single image or a sequence of images digitized in 32 bits (16 million colors with alpha channel) or 24 bits (16 million colors without alpha channel). From the **Format** pop-up menu, choose **RGB** to save in 24 bits or **RGBA** or **RGB+A** to save in 32 bits. With the **RGBA** option, the alpha channel data are interleaved with RGB data in the file. With the **RGB+A** option, alpha channel data is stored separately.

From the **Compression** pop-up menu, choose **LZW** or **PackBits** to compress the file. Select **None** for no compression. You can enter optional text in the **Artist** input field.

THE AURA VT INITIALIZATION FILE

A number of default parameters are defined in the Aura VT configuration file. This file is called AuraVT.ini and it is located in your main system directory (e.g., Windows, Winnt, etc.). It is a plain ASCII text file that can be edited with any word processor or text editor, such as the WindowsTM Notepad.



NOTE When you save the configuration file, make sure that it is an ASCII text file. Otherwise, Aura will not be able to read it.

All values that you can modify in this file are located in the [STARTUP] section. In the following description, terms between square brackets indicate the type of values expected for each parameter (the brackets do not appear in the file). If one of these lines is missing in the .ini file, Aura will use the default value for the corresponding parameter.

You may comment out lines by placing a semi-colon (;) at the beginning of the line, allowing you to leave settings for future use.



NOTE To enable tablet subpixel input, add this line: Nosubtablet=0. This option does not work on all computers, it will depend of your system.

DDrawEmulationOnly=1

This line disables the DirectDraw hardware acceleration. You must use this setting if your graphic card doesn't support all DirectDraw acceleration options.

DDrawRgbaOnly=1

This line sets DirectDraw to RGBA mode instead of YUYA mode. You must use this setting if your graphic card doesn't support YUV DirectDraw acceleration. This setting is equal to **DirectDraw Use RGB** on the Settings panel.

HomeDir=[directory]

This line indicates the location of the Aura home directory, in other words, the access path to the directory containing the executable program. This line is automatically updated when Aura is installed on your system. If you move the Aura directory after it is installed, you will need to modify this line accordingly.

GeorgeDir=[directory]

This line indicates the default directory used to store George programs. Aura displays the contents of this directory when you want to select a George program. The default directory is the George subdirectory in the Aura home directory.

Gauge=[0 | 1] Setting this to 0 will suppress the display of progress gauges.

Last_Config=[configuration file]

This indicates the last configuration file used when Aura was last run. This entry is updated each time you run Aura.

PopX=[value] PopY=[value]

These two values define the position of the center of the menus and windows displayed by Aura. By default, these windows are centered in the center of the screen. Use this for dual monitor systems.



HINT For dual monitor setup you can adjust where the popup menus appear so they are not sliced in half between the two monitors.

Try adding these lines to the Aura2.ini or AuraVT.ini file to adjust the position of the pop-ups. PopX=300 PopY=300 Changing the number, changes the position of the pop-ups.

ReqFileName=No

By default, the name of the last loaded or saved file appears in the file selector when you save or load a file. Add this line into the Aura2.ini file if you want the Name field in the selector to remain empty.

INTERNET RESOURCES

In addition to information about NewTek products, upgrades, and the latest releases of Aura software, our World Wide Web and FTP sites have various support files and information you may find helpful.

Our web address is <http://www.newtek.com> and our FTP address is <ftp.newtek.com>.

You can also find and exchange information with the Aura discussion group:
<http://vbulletin.newtek.com>

TECHNICAL SUPPORT

The best source for help with installing or configuring software or hardware is the retailer from whom you purchased your NewTek product. While we have made every effort to keep your software and hardware trouble-free and easy to use, you may occasionally need help right from the source. If you have problems with NewTek supplied hardware or Aura doesn't seem to be functioning as it should, please contact technical support in one of the following ways:

- By email: atech@newtek.com
- By fax: (210) 370-8030
- By telephone: (210) 341-8444. Technicians are available to answer questions from 10:00 AM to 5:00 PM Central Time, Monday through Friday

Please supply in your communication or have the following information handy when calling:

- Your computer's operating system and version (e.g., Windows 2000, XP Pro, etc.)
- The version of AuraVT you are using
- The amount of RAM in your computer
- Any relevant specifics about your system (display card type, memory managers, accelerator type, etc.)
- Your product serial number



NOTE Your product must be registered before you can receive support.